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ABSTRACT

A study examined the day-to-day work activities of teachers of Technician Education Council (TEC) certificate programs in Great Britain. During the study, a detailed questionnaire dealing with the tasks performed by TEC teachers, the amount of time spent on TEC teachers on individual activities, and the impact of the TEC programs on teacher activities was administered to a sample of 270 teachers involved in TEC certificate programs in mechanical engineering, architecture, building trades, surveying, life sciences, and chemistry and physics. In a second phase of the study, 25 of these teachers were asked to complete work diaries. Based on these data instruments, it appears that a majority of the teachers concerned with TEC programs believed that the introduction of these programs has resulted in their having to devote more time to certain activities. Included among these areas are student assessment, curriculum development, preparation for teaching, administration and liaison. Teachers with TEC responsibilities seem to spend proportionately less time on preparation, for both TEC programs and other courses, than do teachers with no TEC responsibilities. Perhaps the chief problem associated with the introduction of TEC programs is the belief held by many teachers that they have insufficient time to adjust to the new curricula. (The survey instrument, breakdowns of survey data, and data from the work diaries are appended.) (MN)

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Further Education Curriculum Review and Development Unit

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Curriculum change Part 2a

programme development
in colleges

Part 2a: The work activities
of teachers on TEC certificate
programmes

A report of a study by
S. Dodd, R.B. Lovell and
Dr. R. Oxtoby

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Dear Sir/Madam

CURRICULUM CHANGE - PART 2A: THE WORK ACTIVITIES OF TEACHERS ON TEC CERTIFICATE PROGRAMMES

In December 1981 we published the main volume of Curriculum Change which described an evaluation of TEC programme development in colleges. The attached volume, which has a limited distribution, is a section of a more detailed volume describing the methodology of the evaluation and additional data supporting the main volume. This particular section (Part 2A) describes the work activities of teachers involved in TEC programmes. It is a separate but component study, undertaken by S Dodd, RB Lovell and Dr R Oxtoby, commissioned by the FEU and edited by its Development Officer, Christopher Parkin.

It describes the day-to-day work activities of teachers of TEC Certificate programmes in the academic year 1979-80. The summary of the report is to be found on section 6. It concludes that 'a majority of teachers concerned with TEC programmes believe that the introduction of these programmes has resulted in their having to devote more time to certain activities - principally those relating to student assessment, curriculum development, preparation of teaching, administration and liaison - compared with the time they used to spend on these activities in connection with courses replaced by TEC programmes... one of the chief problems associated with the introduction of TEC programmes is the belief by many teachers that they have had insufficient time to adjust easily to the new curricula and to the new styles of development... But... these beliefs have probably not been such as to hamper seriously the implementation of new programmes'.

The report incidentally provides a valuable illustration of the development and use of checklists to ascertain the work activities of teachers in further education. These checklists should, in their own right, provide a useful aid to staff developers, managers and others who are interested in the complexity of work performed by FE teachers in their day-to-day work.

A limited number of extra copies of this report and of the main volume, are available on request.

Yours faithfully

JACK MANSELL
Director

Designed by a student of Mid-Cheshire College of Further Education

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The Further Education Curriculum Review and Development Unit (FEU) is an advisory, intelligence and development body for further education. It was established in 1977 by the Secretary of State for Education and Science to make possible a more co-ordinated and cohesive approach to curriculum development in FE by:

- 1 reviewing the range of existing curricula and identifying overlap, duplication and deficiencies
- 2 determining priorities for action to improve the total provision and suggesting ways in which improvement can be affected
- 3 carrying out specific studies, helping with curricula experiments, and contribution to the evaluation of objectives, and
- 4 disseminating information about the process of curriculum development in FE.

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1. Introduction – Background and Aims

The Technician Education Council was established in March 1973 in fulfilment of a recommendation of the Haslegrave Committee on Technician Courses and Examinations.¹ The intention was twofold: to rationalise existing provision in order to provide a simpler, more flexible and more efficient system of technician education; and to ensure that the system of technician education is responsive both to industrial requirements – nationally and locally – and to students' needs. In addition, however, TEC's function incorporates a brief "to keep the system which it introduces under review, and to innovate – or to provide for innovation, for the Council hopes that many new developments and initiatives will originate from colleges and other establishments in the field".² In this latter context, senior officers of the Council met with members of the Board of Management of the Further Education Curriculum Review and Development Unit (FEU) in November 1977 and agreed in principle that the Unit should contribute to the evaluation of the curriculum processes of TEC.

In April 1978, the FEU appointed a Development Officer to assume responsibility for an evaluation programme to be concerned with the effects of TEC policies and requirements on curricula and their development in colleges. As a result of an initial phase of open-ended enquiry, the scope of the programme emerged as involving related studies of the curriculum framework of TEC schemes, teaching and learning methods, the assessment of learning, utilisation of staff and other resources, all within an overall evaluation of the process of curriculum development.³ Subsequently, a number of component studies were commissioned concerning, in particular, the work activities of teachers, the interpretation of selected units and the processes/outcomes of the development and implementation of TEC programmes. This report relates to the first of these, namely the day-to-work activities of teachers involved with TEC programmes.

There has been no shortage of comment in recent years on the policies of the Technician Education Council and on the sorts of problems that have arisen in colleges as a result of the introduction of TEC programmes.⁴ Not least, perhaps, it is apparent that the introduction of these programmes has been a fairly time-consuming process for many teachers. There is, however, a shortage of evidence about precisely what additional demands

have been made on teachers and about the actual changes in teachers' jobs that can be attributed directly to the development and implementation of TEC programmes. Accordingly, the project to be described here was designed to assess the impact of introducing TEC programmes on the day-to-day work activities of teachers, and in particular:

- (a) to identify what teachers of TEC programmes do as part of their jobs;
- (b) to quantify as far as possible how much time is spent by teachers of TEC programmes on different activities;
- (c) to determine how the introduction of TEC programmes has affected what teachers do and the time that they spend on different activities.

The project was undertaken during the twelve-month period April 1979 – April 1980.

2. Research Design

The general approach to the design of this investigation was worked out mainly in consultation with colleagues and with the FEU Development Officer responsible for the overall evaluation programme.⁵ It was based on the use of a postal questionnaire which sought to discover whether the time that teachers spend on particular tasks or operations has changed as a consequence of the development and implementation of TEC programmes. This was supplemented by the use of a work diary to obtain an impression of the actual amount of time that teachers currently devote to different activities. The sample of teachers invited to complete these instruments was selected so as to be broadly representative of teachers involved with TEC Certificate programmes in Sectors A5 (Mechanical & Production Engineering), B2 (Architecture, Building & Quantity Surveying) and C1/C2/C5 (Science, Life Sciences, Applied Chemistry & Physics).

The timetable for the study was as follows:

November - December 1979	Initial planning and formulation of general approach
June - October 1979	Clarification of outstanding issues relating to instruments and analysis; pilot investigations
November - December 1979	Main enquiry; administration of questionnaire to sample of 270 teachers
January - February 1980	Supplementary enquiry; completion of work diary by 25% of main sample
March - April 1980	Preliminary analysis and writing up of findings

2.1 Main Features of the Enquiry

There have been very few empirical studies of the day-to-day work activities of teachers, either in this country

or elsewhere.⁷ It has not been possible to trace any published studies which analyse the job of a teacher in further education in the kind of detail that was considered necessary for the main part of this enquiry. It was decided, therefore, to try to compile a checklist of teachers' work activities with a view to incorporating this into a questionnaire to be sent to a sample of teachers involved with TEC programmes. Apart from the checklist which was used to obtain information about whether respondents thought they spent more time or less time on various activities in connection with TEC Certificate programmes compared with the time spent in connection with the corresponding City & Guilds and/or National Certificate courses, the questionnaire was used to elicit background information about the respondents, their teaching programmes and their views about TEC programmes generally.

The use of checklists in analysing jobs has been shown to have certain advantages over other methods (e.g. diaries, participant observation), not least because checklists tend to be relatively simple to complete.⁸ During the exploratory stages of the research, three checklists were produced as follows:

- (i) *Items representing the work activities of teachers generally in further education:* 238 items arranged in twenty categories and derived from (a) open-ended questionnaires completed by 20 in-service students attending Garnett College (b) published literature relating to studies of teachers' jobs (c) preliminary information from a project being undertaken at the University of Nottingham into the work of schoolteachers.⁹
- (ii) *Items representing work activities likely to be emphasised by the introduction of TEC programmes:* 140 items arranged in twenty categories and derived from (a) in-depth interviews with ten teachers of TEC Certificate programmes in two colleges in the south of England (b) a study of TEC Circulars, Programme Guidelines etc. and of published literature relating to TEC policies and practices
- (iii) *Items for incorporation into the questionnaire to be administered as a pilot study prior to the main enquiry:* 125 items arranged in twenty categories, derived from (i) and (ii), and chosen by the researchers to represent those work activities

likely to be of greatest interest in relation to the impact of the introduction of TEC programmes.

The first of these checklists is reproduced in full in Appendix I and shows those items which, in one form or another, were incorporated into the pilot questionnaire. This pilot version of the questionnaire was sent in mid-October 1979 to 32 members of staff in three colleges of further education. Names of staff were supplied by Principals and Heads of Department. 20 replies were received (63%) and, on the basis of these, a number of modifications were made to the questionnaire, one of which involved reducing the number of checklist items from 125 to 116. A copy of this revised version is presented in Appendix II.

As explained above, the questionnaire sought information primarily about teachers' perceptions of the impact of TEC on the time which they spent on various activities. Partly in order to corroborate this information, but also to obtain supplementary information about the actual amount of time which teachers devote to the main types of activity represented by the checklist, it was decided to invite approximately 1 in 4 members of the sample to complete a specially-designed work diary. In an attempt to secure a satisfactory response rate, it was decided also to limit this invitation to those respondents to the questionnaire who indicated a willingness to participate. The form of diary used is shown in Appendix III. It relates to the seven-day period 18-24 February 1980 and is based on an earlier version completed by 12 teachers who took part in the questionnaire pilot study.

2.2 The Sample of Teachers

All components of the FEU's evaluation programme are based on a sample of 130 colleges selected randomly and stratified by size and region. This sample represents approximately 30% of further education establishments offering technician courses. About 70 of the colleges are small/medium-sized colleges with FTE student enrolments of fewer than 1500 and 60 are larger colleges with FTE enrolments of more than 1500. So far as the project described in this report is concerned, letters were sent to 25 out of the 130 colleges, inviting them to participate in the enquiry.

Two sort of criteria were used to select the 25 colleges: (a) the colleges should be offering one or more A5, B2 or C1/C2/C5 TEC Certificate programmes but not already being visited or contacted by colleagues undertaking other component studies; (b) the colleges should be drawn from different parts of England and Wales, be of different sizes and be offering programmes which started in 1976, 1977 or 1978. The letters were addressed to the Principal or Director of the institution concerned, asking them to identify the appropriate Heads of Department or Programme Co-ordinators who could forward the names of all full-time members of staff teaching on TEC Certificate programmes in Sectors A5, B2 and C1/C2/C5 during the Autumn term 1979. After a short written reminder, followed by a telephone call in those instances where no reply was received, 18 out of 25 institutions agreed to co-operate and to supply the names of all members of staff teaching on the relevant TEC programmes.¹⁰ Eight colleges were small/medium-sized institutions and ten were large institutions; five were in the North of England, two were in the Midlands and East Anglia, six were in the South of England and five were in Wales. This meant that large colleges and institutions in Wales were somewhat over-represented in the sample at the expense of small/medium-sized colleges and institutions in London and the Midlands.

In the event, this exercise generated 350 names of teachers eligible for selection as members of the sample to be used in the main enquiry. The teachers were distributed roughly as follows: Sector A5 (N=171 from 18 colleges), Sector B2 (N= 86 from 11 colleges), Sector C1/C2/C5 (N=48 from 9 colleges), General and Communication Studies (N=45 from 12 colleges). In order to reduce these numbers slightly and to produce a more evenly balanced sample, 270 names were chosen at random and stratified by Sector in the ratio 100:80:45:45. At the cut-off date for receipt of completed questionnaires, 212 members of the sample had responded:¹¹ 206 responses contained useable information (76% response), although only 173 of these satisfied the necessary requirements for inclusion in the survey, i.e. completed by full-time members of staff teaching on TEC Certificate programmes during the Autumn term 1979-80 who had taught previously on courses superseded by TEC programmes. 73 of these 173 respondents indicated a willingness to help further, if invited, by completing a one-week *Diary of Work*

Activities, each of whom was subsequently sent a diary to complete (see Section 5).

The response rates are shown in greater detail in Tables 2A and 2B. Generally speaking, they can be regarded as satisfactory, although it is unfortunate perhaps that such a large proportion of teachers of General and Communication Studies (41% of those who responded) failed to satisfy the necessary requirements for inclusion in the survey, largely because they had not taught previously on courses replaced by TEC programmes.

The response to the *Diary of Work Activities* may also be non-representative in the sense that it relies on teachers who volunteered to participate. Although the pattern of responses does not correspond exactly to the pattern of involvement with the different programmes amongst members of the original sample, nevertheless, the overall response rate is well in excess of what is commonplace for postal questionnaire and diary studies and, in addition, it is re-assuring to note that the response rate did not appear to vary markedly amongst members of the sample from different colleges.

Table 2A: **Members of the Sample and Respondents to the Questionnaire by Field of Involvement**

	Sample	Respondents who completed part or all of the questionnaire*		Respondents who completed the whole of the questionnaire		Respondents who indicated a willingness to complete a work diary	
		N	%	N	%	N	%
A5 programmes	100	73	73	66	66	25	25
B2 programmes	80	63	79	55	69	23	29
C1/C2/C5 programmes	45	36	80	32	71	14	31
General and Communication Studies	45	34	76	20	44	11	24
All fields of involvement	270	206	76	173	64	73	27

* The invitation to complete the whole of the questionnaire was limited to full-time members of staff teaching on a TEC Certificate programme who had taught previously on a course superseded by this Certificate programme.

Table 2B: **Members of a Sub-Sample and Respondents to the Diary of Work Activities by Field of Involvement**

	Sub-sample	Respondents who completed a work diary	
		N	%
A5 programmes	25	19	76
B2 programmes	23	16	70
C1/C2/C5 programmes	14	13	93
General and Communication Studies	11	8	73
All fields of involvement	73	56	77

In respect of the allocation of respondents to the four groupings shown in Tables 2A and 2B (A5 programmes, B2 programmes, C1/C2/C5 programmes, General and Communication Studies), the data are based on information supplied by Principals and Heads of Department. An examination of the completed questionnaires shows that, in addition to one or two minor errors in this initial allocation, only about two-thirds of the respondents can be identified solely with one particular programme. More than 50 respondents, including rather more than half of those teaching General and Communications Studies, are teaching a spectrum of TEC units which form part of two or more different programmes. Table 2C presents a detailed breakdown of the respondents in terms of the number of programmes with which they are associated and the extent to which the programmes are based on single-college submissions or joint-college submissions. The proportion of respondents teaching on programmes that have resulted from joint-college submissions (approx. 53%) is roughly the same as the proportion of joint-college programmes (approx. 46%) offered by the 130 colleges in the populations from which the sample was drawn.

Additional information about the respondents, their teaching and other commitments in relation to TEC programmes, is presented and analysed in Section 3. Partly because of the complexity of the involvements outlined in Table 2C and the difficulty of drawing conclusions about the respondents in terms of these involvements, most of the data in Section 3 is discussed in terms of the subject area in which respondents indicated that they did most of their teaching¹² i.e. Building (N=45), Mechanical Engineering (N=50), Science and Mathematics (N=48), General and Communication Studies (N=18), Other (N=12). In this way, it has proved possible to draw comparisons between what is revealed about TEC teachers and what is known about teachers in further education as a whole. The main difference between the programme classification (Table 2A) and the subject area classification is that approximately 15% of respondents involved with A5 programmes (Mechanical and production engineering) or with B2 programmes (Architecture, building and quantity surveying) regard themselves primarily as teachers of science and mathematics.

Table 2C: Number of TEC Certificate Programmes with which Respondents are Associated by Type of College Submission

(N=162; approximately 6% of respondents were "not sure" about the type of college submission)

	Associated with one programme only	Associated with two programmes	Associated with three or more programmes
Single-college submission	47	15	4
Joint-college submission	62	20	7
Combination of single and joint-college submissions	-	7	-
All types of submission	109	42	11

3. TEC Teachers and TEC Programmes

It seems as though relatively few teachers in further education are concerned solely with TEC programmes. Amongst the 173 respondents in the present study, only about 10% spent virtually the whole of their timetabled teaching hours on TEC programmes of one kind or another. For as many as 40% of respondents, about one-quarter or less of timetabled hours were allocated to TEC programmes. Table 3A shows that teachers of building and civil engineering involved with TEC are somewhat more likely than other teachers to devote a large proportion of their time to TEC programmes; 45% of respondents involved with B2 programmes devoted at least three-quarters of their teaching time to TEC programmes.

profession as a whole (23% as against approximately 32%), whereas rather more respondents hold Senior Lecturer posts than do further education teachers generally (31% as against approximately 24%). These differences are especially striking in the case of teachers of building and engineering (see Table 3C) and seem to be reflected also in terms of age and experience. More than 40% of respondents teaching building and engineering subjects are over the age of 49 years, for example, and about three-quarters of respondents teaching these subjects have had more than ten years of full-time teaching experience in further education.

Overall, the pattern of qualifications amongst

Table 3A: **Proportion of Teachers' Timetabled Hours Allocated to TEC Programmes of Any Kind by Subject Area**
(% of respondents in each category)

	Almost all	About $\frac{3}{4}$	About $\frac{1}{2}$	About $\frac{1}{4}$ or less
Building	31.1	20.0	24.4	24.4
Mechanical Engineering	8.0	20.0	36.0	36.0
Science and Mathematics	2.1	6.2	29.2	62.5
General and Communication Studies	-	11.1	44.4	44.4
Other	8.3	25.0	25.0	41.7
All subject areas	11.6	15.6	31.2	41.6

For 56% of respondents as a whole, this involvement with TEC was limited to Certificate programmes; for the remainder, the involvement also extended either to Diploma programmes (17%), Higher Certificate/Diploma programmes (17%) or to both (10%). In the case of teachers of building and civil engineering, the involvement solely with TEC Certificate programmes applied to 36% of respondents; for science and mathematics teachers, the corresponding proportion is 77%. Judging by what is known about the characteristics of teachers in further education, it appears that respondents are somewhat older and more experienced than members of the profession as a whole.¹³ Tables 3B, 3C, and 3D show the age distribution, grade of present post and years of teaching experience amongst respondents. In particular, the proportion of respondents holding Lecturer 1 posts is smaller than the corresponding proportion for the

respondents is broadly similar to that amongst members of the profession as a whole, although a greater proportion of respondents have completed a course of teacher training than is the case generally. Thus, approximately 50% of respondents are graduates (see Table 3E), more or less exactly the same proportion as that amongst all teachers in colleges of further education, whereas 66% of respondents possess a Certificate in Education or its equivalent, compared with about 50% of all non-polytechnic teachers in further education.¹⁴ Once again, however, respondents who are teachers of building subjects seem to have different characteristics to those of their counterparts in the profession as a whole; 1 in 3 of these respondents are graduates, for example, compared with only about 15% of teachers of building and construction in all colleges and polytechnics.¹⁵

Table 3B: **Age Distribution of Respondents by Subject Area**
(% in each category)

	Under 30	30-39	40-49	50 and over
Building	-	15.6	40.0	44.4
Mechanical engineering	-	14.0	42.0	44.0
Science and Mathematics	6.2	35.4	29.2	29.2
General and Communication Studies	16.7	38.9	27.8	16.7
Other	16.7	16.7	41.7	25.0
All subject areas	4.6	23.1	36.1	35.8

Table 3C: **Respondents' Grade of Post by Subject Area**
(% in each category)

	Lecturer I	Lecturer II	Senior Lecturer	Principal Lecturer	Head of Department
Building	17.8	22.2	42.2	6.7	11.1
Mechanical engineering	22.0	38.0	32.0	6.0	2.0
Science and Mathematics	27.1	45.8	18.7	-	8.3
General and Communication Studies	27.8	44.4	22.2	-	5.6
Other	25.0	16.7	50.0	-	8.3
All subject areas	23.1	35.3	31.2	3.5	6.9

Table 3D: **Years of Full-Time Teaching Experience in Further Education by Subject Area**
(% of respondents in each category)

	Less than 3 years	More than 3 but less than 5 years	More than 5 but less than 10 years	More than 10 years
Building	2.2	6.7	17.8	73.3
Mechanical Engineering	2.0	-	14.0	84.0
Science and Mathematics	4.2	4.2	25.0	66.7
General and Communication Studies	-	22.2	38.9	38.9
Other	-	25.0	33.3	41.7
All subject areas	2.3	6.9	22.0	68.8

Table 3E: **Qualification of Respondents by Subject Area**
(% in each category)

	Graduates	Non-graduates with HNC or HND	Certificate in Education or equivalent	
			Completed	Undertaking currently
Building	33.3	48.9	62.2	6.7
Mechanical Engineering	32.0	48.0	70.0	-
Science and Mathematics	66.7	20.8	60.4	8.3
General and Communication Studies	88.9	5.6	83.3	5.6
Other	58.3	33.3	58.3	-
All subject areas	49.7	35.3	65.9	4.6

It is tempting to conclude that, in deciding which members of staff should be involved with the development and implementation of TEC programmes, colleges have tended to choose their older, more experienced and better qualified teachers. More realistically, perhaps, such a suggestion should be regarded as little more than a tentative hypothesis at this stage, since the information available is not sufficiently detailed and derives from a rather small sample of teachers. Nevertheless, the age and experience of respondents may also be a factor in accounting for the fact that, regardless of the subject area and programme involved, more than half of all respondents claimed to have 'special responsibility' for some aspect of TEC-related work. There is, in fact, a significant relationship between a respondent's age and whether or not he has some kind of 'special responsibility'. Respondents over the age of 40 are more likely to have such responsibilities than those under 40 (χ^2 ; $P < 0.05$). Frequently, this responsibility was that of acting as a course tutor or subject co-ordinator. In the case of respondents who taught on A5 programmes, for example, 52% indicated that they had some kind of special responsibility for TEC programmes. These responsibilities can be classified as follows:

Course tutor or programme supervisor/co-ordinator	42%
Subject leader or co-ordinator	19%
Curriculum development and related activities	13%
Student progress and moderation of students' work	10%

Admission and registration of students	6%
Projects undertaken by students	6%
Miscellaneous administrative duties	4%

Of these respondents with special responsibilities for TEC programmes, 60% had been or were currently involved with the writing of college-devised Units (40% of those without special responsibilities were similarly involved). Unfortunately, however, the picture is complicated by virtue of the fact that when asked to indicate how many of the Certificate Units on which they were teaching were college-devised Units as opposed to standard Units, 20% of respondents (30% in the case of teachers of engineering subjects), including those with special responsibilities, failed to respond or answered "Not Sure". Almost 50% of respondents appeared to be involved with standard Units only (90% of teachers of building subjects); 10% were involved with more than one college-devised Unit. It has not been possible, therefore, to draw any conclusions about the relative effect on teachers' day-to-day work activities of operating with standard Units as opposed to college-devised Units (see Section 4), although respondents' estimates of the time it takes to prepare a college-devised Unit may still be of interest.

Respondents who had been or were involved with the writing of college-devised Units (N=89) were invited to give an estimate of the total number of man-hours involved in writing such a Unit for a TEC Certificate programme. The results are reasonably consistent across different subject areas and are shown in Table 3F.

Table 3F: **Respondents' Estimates of the Total Number of Man-Hours Involved in Writing a College-Devised Unit for a TEC Certificate Programme**
(% of respondents in each category)

	Less than 25 man-hours	25-49 man-hours	50-74 man-hours	75-99 man-hours	100 or more man-hours
Building (N=16)	50	25	19	6	-
Mechanical Engineering (N=28)	39	32	7	7	15
Science and Mathematics (N=19)	58	42	-	-	-
General and Communication Studies (N=16)	38	44	-	12	6
Others (N=10)	60	-	20	10	10
All subject areas	47	31	8	7	7

Virtually 80% of respondents suggest that up to 50 man-hours are involved in writing a college-devised Unit.¹⁶ The average estimate (44½ hours), therefore, amounts to rather less than the hours of study which a student would be expected to devote to a Unit. Interestingly enough, perhaps, there may be a slight tendency for respondents who became involved with TEC at a relatively early stage to put forward lower estimates than respondents whose first involvement took place more recently. 86% of respondents who were first involved with TEC in 1977 or earlier, including all of those involved in 1975 or 1976, estimated that fewer than 50 man-hours were required to write a college-devised Unit compared with 74% of respondents who first became involved in 1978 or 1979. These differences are not statistically significant, however, and any interpretation is

doubtless complicated by inter-relationships between the respondent's date of initial involvement with TEC and his subject area.¹⁷

Although the main purpose of this investigation is to try to assess the impact of TEC programmes on the day-to-day work activities of teachers, it is also important to know more about teachers' views on the introduction of TEC programmes generally, if only because these views might affect teachers' perceptions about changes in their work and because, in any event, available evidence is highly impressionistic. Writing some three years after the establishment of TEC, one leading commentator suggested that "the mounting criticism of TEC relates predominantly not to its aims but to the policies being adopted to achieve these aims".¹⁸ Tables 3G and 3H

Table 3G: **Respondents' Views on the Original Decision to Establish the Technician Education Council**
(% in each category, N=172)

	"Made a lot of sense"	"Made a fair amount of sense"	"Made hardly any sense"	"Made no sense at all"
Building	17.8	53.3	24.4	4.4
Mechanical Engineering	22.0	44.0	22.0	14.0
Science and Mathematics	8.5	40.4	34.0	17.0
General and Communication Studies	44.0	38.9	16.7	-
Others	33.3	41.7	16.7	8.3
All subject areas	19.8	44.8	25.0	10.5

Table 3H: **Respondents' Views on the Introduction of TEC Programmes in Practice**
(% in each category, N=169)

	"Most successful"	"Fairly successful"	"Fairly unsuccessful"	"Most unsuccessful"
Building	13.3	64.4	20.0	2.2
Mechanical Engineering	2.0	55.1	24.5	18.4
Science and Mathematics	8.9	46.7	22.2	22.2
General and Communication Studies	27.8	44.4	27.8	-
Others	8.3	58.3	25.0	8.3
All subject areas	10.1	54.4	23.1	12.4

suggest that respondents have a fairly common pattern of views, both about the original decision to establish TEC programmes in place of City & Guilds and National Certificate courses and also about the degree of success that has accompanied the introduction of these programmes in practice. Broadly speaking, almost two-thirds of respondents thought that the decision to establish TEC made either "a lot of sense" or "a fair amount of sense" and that, on the whole, the introduction of TEC programmes had been either "most successful" or "fairly successful". Teachers of General and Communication Studies and of building subjects were somewhat more likely than other teachers to have favourable views, although the differences are not statistically significant. As many as half of the science and mathematics teachers seemed to hold what might be thought of as unfavourable views. A more detailed analysis of responses to the question about the extent to which the introduction of TEC programmes has been a success or not reveals no significant differences amongst respondents. Whether a teacher believes that TEC has been a success or not seems to be unrelated to the teacher's qualifications (including teacher training), years of teaching experience or degree of involvement with TEC - both in terms of number of years of involvement and proportion of timetabled hours currently devoted to TEC.¹⁹

These generally favourable views about the introduction of TEC programmes are substantiated to some extent by the written comments received in response to the invitation to complete a sentence beginning "I feel sure that I could do a better job as a teacher on TEC Certificate programmes if only..." These comments²⁰

can be classified as follows:

... More time was available	41%
... The approach to curriculum content was changed	16%
... The system of student assessment was different	15%
... There was better consultation or clearer guidance	13%
... There was less administration	9%
... Students were better qualified	4%
... Learning resources and facilities were improved	3%

A selection of comments is presented in Appendix IV.

Broadly speaking, there was a fair balance between those comments which seemed to be arguing in favour of a greater freedom and flexibility in approach (e.g. "... the whole system was made more flexible," "... I was allowed to stretch my students", "assessment was abandoned and replaced by a 'student profile'") and those which called for greater prescription (e.g. "... a national TEC Certificate programme was organised", "... specific objectives were more clearly defined", "... the assessment was done externally"). The comments were restrained and to the point and it is difficult to escape the conclusion that, had respondents felt particularly strongly about the inadequacies of TEC, they would have said so in much less temperate language. It is perhaps striking that 40% or so of the comments related to the need for more time - for curriculum development, for preparation, for teaching the required subject matter and for marking. This aspect of the findings is taken up in greater detail in Section 4.

4. Changes in Teachers' Work Activities

When asked to signify whether they spent more time or less time on each of 116 activities in connection with TEC Certificate programmes compared with the time spent in connection with the corresponding City & Guilds and/or National Certificate courses, at least half of the respondents indicated that they spent "more time" now with TEC programmes on almost 25% of the different activities. The ten items on which more than 60% of respondents declared that they now spent more time were as follows:

- Mark test papers or internal examinations;
- Discuss methods of assessment with colleagues;
- Read guidance notes and circulars issued by examining or validating body;
- Compile assessment plan for course;
- Write short-answer items;
- Determine student grades;
- Work as a member of a team to develop new course or to modify existing course;
- Discuss course arrangements and students' work with external examiner or moderator;
- Supervise testing sessions as part of classroom teaching;
- Consider whether students' entry qualifications or experience give exemption from part of the course.

On only 10% of the activities did the number of respondents claiming that they spent "less time" with TEC programmes exceed the number of those suggesting that they spent "more time". Not unexpectedly, perhaps, these were activities on which a majority of respondents indicated that they spent "about the same time" now with TEC programmes.

The pattern of responses on each of the 116 items in the checklist is presented in Appendix V. It is noticeable that, for a majority of activities (more than 60% of items in the checklist), the number of respondents indicating that they spent "about the same time" on the activity concerned exceeds the number indicating that they spent "more time" on the activity. This is particularly true of items relating to the admission and recruitment of students, teaching methods, lesson planning and professional development. Moreover, for about a third of all the activities, the number of respondents indicating that the item was "not applicable" exceeded the number indicating that they spent "more time" on the activity. Table 4A shows the distribution of responses when the

checklist items are consolidated into seven major groups (see Appendix I for a detailed description of the groups). Arguably, therefore, when teachers claim that the introduction of TEC programmes has meant that they need to devote more time to their work, they are talking mainly about activities concerned with administration, curriculum development, preparation for teaching and student assessment. If the major groups of activities are further sub-divided into the twenty categories used initially to draw up the checklist and arranged in rank order in terms of the proportion of respondents who indicate that they spend "more time" now with TEC programmes, the list is as follows:

- Devise tests and other evaluative instruments;
- Administer tests and assess student performance;
- Prepare a scheme of work;
- Plan and prepare a new programme or Unit;
- Undertake miscellaneous administrative tasks and consultations;
- Prepare and maintain records and reports;
- Produce teaching materials;
- Plan a lesson and select resources;
- Assist with student recruitment, selection and admissions;
- Seek to further the status of the profession and to advance professional competency and awareness;
- Direct student activity;
- Counsel students and offer advice on career opportunities;
- Use teacher-centred methods of presentation.

The emphasis placed on record keeping and administration, student assessment and preparation for teaching is further illustrated by comments which teachers made in response to an invitation to complete in their own words a sentence beginning "The biggest single change in my day-to-day work activities as a result of the introduction of TEC programmes has been. . ." The great majority of responses can be classified as follows:²²

... the increase in record keeping and administration	33%
... more assessment and marking	30%
... coming to terms with extra work-load and the shortage of time	8%
... the need to work to a clearly organised plan	6%
... adapting to the use of behavioural objectives	5%

- ... having to prepare additional handouts or work sheets 5%
- ... coping with new or revised subject matter 3%
- ... the increased interchange with colleagues 3%

Similarly, respondents were offered the opportunity of describing any areas of their own work activities which they thought were not covered adequately by the checklist and, out of the 90 or so replies, approximately 50% were concerned with either marking and testing, or records, paperwork and general administration. The remainder were divided more or less evenly between assisting other staff, especially part-time staff, writing college-devised Units, providing information for external moderators and outside bodies, and a collection of miscellaneous items.

It seems reasonable to conclude, therefore, that a majority of respondents believe that the introduction of TEC programmes has resulted in their having to spend more time on certain activities compared with the time that they used to spend on these activities in relation to the courses replaced by TEC programmes. Equally, however, it is apparent that for a variety of other activities, many respondents believe that the introduction of TEC programmes has made relatively little difference. This is especially the case with activities directly

affecting methods of teaching and interactions with students (see Table 4B). TEC does not, of course, prescribe what teaching methods should be adopted for its programmes, although the Council hopes "to see an adequate tutorial system for students working for its awards... and the development of new learning techniques" and suggests that "it will not be necessary for the whole of a student's programme to be committed to formal contact with his teachers", colleges being encouraged "to develop informal approaches to teaching, and to allocate to the student time for self-instruction, the organisation of his work, and assimilation of what has been taught."²³

The project described here was not designed to assess the extent to which TEC's policies in relation to teaching and learning are being achieved, but an obvious reaction to the findings shown in Table 4B is that methods of teaching have not changed all that much as a result of the introduction of TEC programmes. Of all the 116 activities listed in the checklist, for example, 'hold tutorial session with 1-4 students' received almost the greatest proportion of "not applicable" claims; two-thirds of respondents indicated that they spent "about the same time" on presenting lectures to groups of students. Against this, however, the findings do suggest that there

Table 4A: Respondents' Claims about the Amount of Time Spent on Different Groups of Activities in connection with TEC Certificate Programmes compared with the Time they used to spend on City & Guilds and/or National Certificate Courses

(% of respondents in each category; average for the number of checklist items concerned)

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applicable"
Curriculum development (13 items)	43	26	4	27
Preparation for teaching (19 items)	35	42	8	15
Teaching - Implementation (22 items)	18	49	10	22
Assessment and evaluation (18 items)	48	33	6	13
Recruitment and counselling (13 items)	23	42	5	29
Personal and professional development (11 items)	27	39	8	26
Administration and related activities (20 items)	31	48	4	17

Table 4B: **Respondents' Claims about the Amount of Time Spent on Various Activities and Groups of Activities in connection with TEC Certificate Programmes compared with the Time they used to spend on City & Guilds and/or National Certificate Courses**
(% of respondents in each category)

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applicable"
Use study kits, programmed learning materials, or 'learning packages'	13.3	38.7	11.0	37.0
Hold tutorial sessions with 1-4 students	12.1	12.3	13.3	61.3
Help students with academic difficulties outside normal class time	21.4	53.8	10.4	14.5
Supervise students during laboratory, workshop or other practical sessions	17.3	48.0	11.0	23.1
Allocate time to students for private study or self-instruction during normal class time	21.4	31.4	11.6	32.4
Present a lecture to a group of students	16.2	67.1	5.2	11.6
Organise students into small groups for discussions as part of teaching	13.9	34.1	11.6	40.5
Use teacher-centred methods of presentation (8 items)	17.1	50.3	9.0	23.6
Direct student activity (10 items)	21.0	43.4	11.6	24.0
Counsel students and offer advice on career opportunities (16 items)	17.5	60.2	8.5	13.8

has been some movement towards the introduction of informal approaches to teaching, particularly in certain subject areas. Approximately half of the respondents who teach General and Communication Studies, for example, indicated that they now allocate more time to students for 'private study or self-instruction during normal class time'. 24% of teachers of mechanical engineering claim that they spend more time in using 'study kits, programmed learning materials or learning packages with students'.

Generally speaking, the pattern of responses to the items in the checklist seems to depend rather more on the teacher's subject area, on the date of his initial involvement with TEC and on whether he has any special responsibility for TEC programmes, than on any of the other characteristics considered in the survey.²⁴ Even so, the differences are not especially marked. Table 4C shows the mean responses on all of the 116

activities for different groups of respondents. It is inappropriate to try to draw any firm conclusion from these data, but there is at least a hint that teachers of science and mathematics are somewhat less likely than others to claim that "more time" is required now with TEC programmes, whereas teachers with special responsibilities and those who became involved with TEC at a relatively early date are rather more likely than others to claim that "more time" is required.²⁵ Table 4D illustrates some of these possible links in greater detail. Although not necessarily conclusive in itself, it highlights the way, in which teachers of science and mathematics, on the one hand, and teachers of General and Communication Studies, on the other, tend to be at opposite ends of the scale when it comes to making judgements about the extent to which the introduction of TEC programmes has led to changes in the amount of time devoted to different activities.

Table 4C: **Respondents' Claims about the Amount of Time Spent on 116 Activities in connection with TEC Certificate Programmes compared with the Time they used to spend on City & Guilds and/or National Certificate Courses**
(% of respondents in each category; mean response for 116 items)

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applicable"
Respondents who teach				
Building	32.0	43.7	7.9	16.3
Mechanical Engineering	35.8	38.7	5.2	20.3
Science and Mathematics	24.3	43.3	7.9	23.8
General & Communication Studies	36.5	25.6	4.9	23.0
Other subjects	38.1	37.5	6.5	16.6
Respondents with				
special responsibility	34.6	42.1	7.2	16.1
no responsibility	28.7	39.5	6.1	25.2
Respondents first involved with TEC				
in 1978 or 1979	24.9	37.6	8.6	28.4
in 1977	28.6	42.8	6.7	21.2
in 1976 or earlier	35.8	41.0	6.1	17.1
All respondents	31.8	40.9	6.7	20.3

Note: Discrepancies in totals due to omission of "No response" category

In conclusion, therefore, it is evident that many teachers believe that the introduction of TEC programmes has resulted in their having to spend more time now on certain activities – principally activities concerned with administration, curriculum development, preparation for teaching and the assessment of students – compared with the time that they used to spend in relation to the courses superseded by TEC programmes. Conceivably, the degree to which this belief is widespread depends not only on the activity concerned, but also on the subject area in which the teacher does most of his teaching and the extent to which he has any special responsibilities for TEC programmes. In any event, it is apparent that for a good many activities, the introduction of TEC programmes has probably not caused teachers to devote more time to these activities.

Assessing the impact of TEC on the day-to-day work

activities of teachers is a complicated task and, inevitably, there are a good many shortcomings and weaknesses associated with the approach adopted here. In the first place, of course, the use of a checklist provides no indication of the actual amount of time devoted to particular activities. Inviting a proportion of the respondents to complete a work diary (see Section 5) was intended to help overcome this deficiency. Secondly, the use of a checklist on a single occasion fails to capture information about the way in which problems and work loads change from year to year, one assumption being that problems associated with any innovation will become less marked and work loads will become less heavy once teachers have grown accustomed to the innovation. In order to try to shed some light on this issue, respondents were invited to complete in their own words a sentence beginning "When I first became involved in the changeover to TEC

Certificate programmes my main difficulty was. ...
Responses can be classified mainly as follows:

... not having enough time	30%
... knowing what to teach, at what level and in what depth	25%
... coming to terms with the increased administration	22%
... coping with new assessment procedures	13%

Other difficulties mentioned (approximately 10% of all responses, see Appendix IV), included 'having to accept some lowering of standards', 'overcoming own personal resistance to change' and 'teaching students with a wide range of academic backgrounds'. To some extent,

therefore, these comments serve mainly to reinforce the view that, as far as teachers are concerned, the chief problems associated with the introduction of TEC programmes relate to the increased amount of administration involved, operating new forms of student assessment and generally having insufficient time to adjust easily. They also point out a more intricate and significant difficulty - that of translating a new approach to curriculum design and development into teaching plans and classroom practice. This important aspect is being considered in greater detail in other component studies of the overall FEU evaluation of TEC programmes in colleges.

Table 4D: **An Index of the Amount of Time spent by Respondents on Selected Activities in connection with TEC Certificate Programmes compared with the Time Spent on these Activities in connection with Courses superseded by TEC Programmes**

	All respondents	Special responsibility		Subject area				
		With special responsibility	Without special responsibility	Building	Mechanical engineering	Science and Mathematics	General and Communication Studies	Other subjects
Compile assessment plan for course	68	70	66	71	72	54	83	75
Use duplicating machine or photocopying equipment	50	51	48	56	54	38	50	58
Implement remedial system for students not making satisfactory progress	49	58	39	53	66	29	45	50
Mark test papers or internal examinations	86	83	89	89	84	83	78	100
Consider whether students' entry qualifications or experience give exemption from part of the course	59	75	42	69	60	50	50	67
Read guidance notes and circulars issued by examining or validating body	69	65	73	76	74	69	61	33
Maintain a filing system	45	52	36	51	52	40	28	33

Note: The index is calculated as % of respondents indicating "more time" now with TEC - % of respondents indicating "less time" now with TEC; the selected items comprise the items from each of the different groups of activities (see Table 4A) with the largest index score for all respondents.

5. Allocation of Teachers' Time

As explained earlier, the work diary (see Appendix III) was intended to provide an indication of the actual amount of time devoted to particular activities by the respondents. It relates to the seven day period 18-24 February 1980. For each of the five weekdays respondents were asked to try to describe all of the work-related activities which they undertook and to indicate the time spent on each activity. A final sheet asked for details of any work-related activities undertaken outside the times covered by the daily sheets, i.e. before 8.00a.m. and after 11.00p.m. or any time over the week-end of 23-24 February.

Respondents were asked, where possible, to classify their work-related activity as either curriculum development, preparation, teaching, assessment, recruitment and counselling, professional development, or administration and liaison. Very few respondents found it necessary to use any other classification. In analysing the data from the work diaries these headings, with the addition of an "other" category, have been used. Respondents were also asked to indicate whether each activity they described was carried out in relation to TEC programmes or not.²⁰ In analysing the data, activities connected with TEC programmes have been described as "TEC related" whilst activities connected with non-TEC courses have been described as "Other".

73 of the original 173 respondents who had received the questionnaire had indicated a willingness to complete the one-week diary of work activities. Each of these 73 volunteers was sent a copy of the work diary.

59% were returned. 56 (77%) had been completed and three, for various reasons, were returned blank (see Section 2.2). The data which follows has been analysed in terms of the subject area in which the respondent has indicated that most of his teaching is done on, alternatively, in terms of whether the teacher has responsibility or not for one or more TEC programmes. Table 5A shows this information in detail. It is worth noting that the proportion of respondents with special responsibility for TEC programmes is greater amongst those who completed the diary (70%) than the corresponding proportion amongst the 173 teachers who completed the questionnaire (54%). In most other respects (e.g. subject area, grade of post) the diary respondents seem to have broadly similar characteristics to those of the questionnaire respondents.

The use of a diary for a single week fails to give an indication of the way in which the teacher's work load may change throughout the year. On the final page of the work diary respondents were asked to comment on the extent to which the period 18-24 February 1980 could be regarded as a typical seven day period. Ten (18%) of the respondents said that they would work more hours than indicated in the work diary during a typical week and five (9%) said that they would typically work fewer hours. The remaining 41 (73%) of the respondents either said that the work diary represented a typical week or made no comment under this heading. As the sample of respondents was not large and as most of the respondents who claimed that the week was a typical one stated that it only differed from a typical

Table 5A: **Work Diary Returns by Respondent's Subject Area**

	Diary completed	TEC Programme responsibility	No TEC Programme responsibility
Building	13	10	3
Mechanical engineering	17	11	6
Science and Mathematics	15	9	6
General and Communication Studies	8	6	2
Other	3	3	0
All subject areas	56	39	17

week by two or three hours the data from all 56 respondents has been included in the various analyses of the work diary exercise.

5.1 Analysis of the Work Diary

Each work diary was used to calculate the total number of hours the respondent devoted to each of the listed work activities under both "TEC-related" and "other" headings. This data has subsequently been analysed in a number of different ways. Table 5B shows the mean hours spent by teachers of different subjects on all work related activities during the seven days for which the diary was kept. It also shows the maximum and minimum hours recorded and gives the standard deviation. Because the sample sizes are small it was not appropriate to carry out tests of significance. It seems, however, that the variation in hours worked within a subject specialism (for example a range of 27.5 hours to 60.2 hours amongst teachers of building subjects) is considerably greater than the variation between the means for the five sub-groups (for example 34.2 hours for General and Communication Studies to 38.8 hours for Building subjects). There are no grounds for believing that a teacher's subject specialism predicts his total work activity.²¹

As was noted in Section 3, relatively few teachers are concerned solely with TEC programmes. Table 5C shows that respondents as a whole spent a mean of 19.3 hours on all TEC-related activities and a mean of 17.9 hours a week on work activities not connected with TEC

programmes. However, there was a difference in the pattern of work for teachers with responsibility for one or more TEC programmes by comparison with those with no such responsibility. Table 5C(b) shows that teachers with TEC programme responsibility were spending a greater proportion of their time on all TEC related activities than on all other activities. Teachers with no special responsibility for TEC programmes, on the other hand, were devoting proportionally more of their time to all non-TEC related activities than to all TEC-related activities.

A more detailed breakdown of the time spent on each of the work related activities used in filling in the work diary is given in Appendix VI. Expressed simply as a percentage of the total time devoted to work-related activities, the data is summarised in Table 5D.

It is evident from Table 5D that, by comparison with teachers with no TEC programme responsibility, teachers with TEC programme responsibilities devote a greater proportion of their total work activity to TEC-related activities under every heading except preparation. TEC-related administration and liaison, perhaps not surprisingly, receives an especially greater proportion of time. The smaller proportion of time spent on preparation by teachers with TEC programme responsibilities holds for both TEC and non-TEC preparation. The explanation for this finding is not immediately obvious, but it may be that teachers with TEC programme responsibility are more likely to have been teaching TEC programmes since their inception

Table 5B: **Mean Hours Spent by Teachers of Different Subjects on College Work during Seven-day Period 18-24 February 1980**

	Minimum hours	Mean hours	Maximum hours	Standard deviation
Building	27.5	38.8	60.2	8.7
Mechanical engineering	25.5	36.0	46.0	5.2
Science and Mathematics	22.0	38.5	48.7	7.9
General and Communication Studies	24.0	34.2	47.5	6.7
Other	32.0	38.3	43.2	4.7
All subject areas	22.0	37.2	60.2	7.3

Table 5C: **Mean Number of Hours Spent by Respondents on Teaching and Other Work Activities during Seven-day Period 18-24 February 1980**

(a) All Teachers (N=56)

	Minimum hours	Mean hours	Maximum hours	Standard deviation
TEC Teaching	1.0	8.1	23.5	5.1
TEC Other Activity	1.0	11.2	27.0	6.4
Non-TEC Teaching	0.0	9.5	20.2	5.4
Non-TEC Other Activity	0.0	8.4	32.0	8.1

(b) Teachers With Responsibility for TEC Programmes (N=39)

TEC Teaching	1.0	8.9	23.5	5.4
TEC Other Activity	1.0	12.4	27.0	6.9
Non-TEC Teaching	0.0	8.0	19.7	5.1
Non-TEC Other Activity	0.0	8.7	32.0	8.2

(c) Teachers With No Responsibility for TEC Programmes (N=17)

	Minimum hours	Mean hours	Maximum hours	Standard deviation
TEC Teaching	1.5	6.3	16.0	3.8
TEC Other Activity	2.7	8.4	18.5	3.9
Non-TEC Teaching	3.5	12.8	20.2	4.6
Non-TEC Other Activity	0.0	7.5	30.0	7.6

(see Section 3) and thus take less time to prepare for this, by now, familiar work. It is also known that these teachers are the older and more experienced ones and it might be assumed that they have a wealth of experience and ready prepared teaching material to draw upon, even if they are teaching a programme for the first time.

Other analyses of the detailed work-related activities described in the work diaries have been carried out using the subject specialism classification (see Appendix VI). Table 5E shows the mean time spent on each detailed work activity by teachers of the various subject

specialisms, expressed as a percentage of their total mean hours worked. It can be seen that TEC teaching is proportionately more demanding of preparation time than other teaching, especially for teachers of building, mechanical engineering, science and mathematics. TEC teaching is also proportionately much more demanding of time for assessment than other teaching and demands proportionately more time for curriculum development activities. These findings confirm in quantifiable terms the more impressionistic data reported in Section 4 (see particularly Table 4A). In other areas such as recruitment and counselling and

Table 5D: **Percentage of Total Mean Hours Spent by Respondents on Specified Work-Related Activities during Seven-day Period 18-24 February 1980**

		Teachers with responsibility for TEC programmes	Teachers with no responsibility for TEC programmes
Curriculum Development	TEC Related	2.9	2.4
	Other	1.7	0.9
Preparation for Teaching	TEC Related	7.8	10.8
	Other	3.8	7.7
Teaching	TEC Related	23.3	17.4
	Other	21.0	36.5
Assessment	TEC Related	11.2	8.4
	Other	3.6	3.5
Recruitment and Counselling	TEC Related	0.9	0.3
	Other	1.0	0.5
Professional Development	TEC Related	1.5	0.6
	Other	2.7	3.5
Administration and Liaison	TEC Related	7.6	1.9
	Other	8.5	5.3
Other	TEC Related	0.7	0.0
	Other	1.2	0.2
Total Time	TEC Related	56.2	41.8
	Other	43.8	58.2

professional development the proportion of time devoted to TEC-related activities is generally smaller than that devoted to non-TEC related activities.

5.2 TEC Work Activities and Total Work Load

From the data obtained from the work diaries and reported above, it is clear that teaching on a TEC programme does appear to make different demands on

a teacher compared with those arising from other courses. In particular, TEC work can be seen to demand more time for curriculum development, for preparation and for assessment. If these activities connected with TEC teaching are demanding more time, where does the extra time come from? It could be that the more TEC work a teacher is engaged upon the less time he will spend on other teaching and the activities connected with it. It is also possible that the extra time might arise from the TEC teacher simply doing more work; working

more hours in the week than the non-TEC teacher. In order to investigate these issues, a correlation matrix was calculated to show the relationship between TEC teaching, other TEC-related activity, total TEC-related activity, other teaching, other work-related activity and the total number of hours worked (Table 5F).

The correlation matrix does support the view that the more time a teacher spends on TEC related activities the less time he will spend on teaching on other courses or on activities connected with running such courses. The evidence for this comes from the negative correlations, significant at the 1% level of confidence, between all

Table 5E: **Percentage of Mean Total Hours Spent by Teacher of Different Subjects on Specified Work-Related Activities during Seven-day Period 18-24 February 1980**

		Building	Mechanical Engineering	Science & Mathematics	General and Communication Studies	Other	All subject areas
Curriculum Development	TEC Related	3.1	1.9	3.3	4.0	0.0	2.7
	Other	0.9	0.5	2.4	3.5	0.0	1.5
Preparation for Teaching	TEC Related	9.6	9.1	8.5	3.9	14.3	8.7
	Other	1.9	3.0	8.7	3.1	13.5	4.9
Teaching	TEC Related	27.5	25.5	11.4	23.2	23.5	21.7
	Other	13.4	32.7	29.2	24.3	23.0	25.4
Assessment	TEC Related	10.6	12.7	8.2	6.0	11.7	10.4
	Other	1.3	2.6	6.5	4.6	2.2	3.6
Recruitment and Counselling	TEC Related	0.5	0.4	0.9	1.3	1.7	0.7
	Other	0.6	0.2	1.7	1.2	0.9	0.9
Professional Development	TEC Related	2.7	0.7	0.7	1.2	0.0	1.2
	Other	4.7	2.1	3.1	2.7	0.0	2.0
Administration and Liaison	TEC Related	11.1	3.3	5.2	2.6	9.1	5.9
	Other	9.3	4.3	8.3	13.5	0.0	7.6
Other	TEC Related	1.0	0.0	0.3	1.3	0.0	0.5
	Other	0.8	0.8	1.5	0.6	0.0	0.9
Total Time	TEC Related	67.0	53.6	38.5	46.4	60.4	52.1
	Other	33.0	46.4	61.5	53.6	39.6	47.9

Table 5F: **Correlation Matrix Showing the Relationship Between Teaching and Other Work-Related Activities**

	TEC Teaching	Other TEC-Related Activity	Total TEC-Related Activity	Other Teaching	Other Activity	Total Work
TEC Teaching	1.00					
Other TEC-Related Activity	0.351*	1.00				
Total TEC-Related Activity	0.776*	0.863*	1.00			
Other Teaching	-0.487*	-0.443*	-0.561*	1.00		
Other Activity	-0.534*	-0.172	-0.404*	-0.139	1.00	
Total Work	0.058	0.607*	0.440*	-0.140	0.477*	1.00

Note: Correlation coefficient significant at the 1% level of confidence (Critical value 0.343)

TEC activities and other teaching (-.561) and other activities (-.404). As the time spent on TEC activities increases, so the time spent on all other activities decreases.

It can also be seen from the correlation matrix that the more time a teacher spends on TEC activities then the longer he will work in the week. The evidence for this is in the positive correlation, significant at the 1% level of confidence, between the total time a teacher spends on TEC related activities and the total hours he works in the week (.440). As the time spent on TEC increases, so the total time spent on all work activities.

There is no significant relationship between the number of hours TEC *teaching* the teacher carries out and his total work load. The reason the heavily committed TEC teacher works longer hours is because he spends more time than his other colleagues on the TEC related activities such as curriculum development, preparation, assessment, recruitment and counselling, professional development and administration and liaison. TEC seems to demand more time for the out-of-class activities than do the other courses still being taught (see Table 5E). The heavily committed TEC teacher finds the extra time

both by spending less time on other teaching and its related activities *and* by working for more hours in the week.

Involvement with TEC, however, is not the only factor that leads to a longer working week. The correlation matrix also shows that the more time a teacher spends on non-TEC related non-teaching activities, then the more hours he will work in a week. The evidence for this is the positive correlation, significant at the 1% level of confidence, between other activity and total work (.477). A teacher's class-contact hours may be only crudely adjusted to take account of his administrative responsibilities and other involvement with his work. Any teacher who is involved with curriculum development, preparation, assessment, recruitment and counselling, professional development and administration inevitably works longer hours, perhaps, than his less involved colleague. The introduction of TEC programmes seems to have resulted in more teachers having a greater involvement in the time consuming non-teaching activities connected with running courses. These teachers have found themselves working longer hours.

6. Summary and Conclusions

This investigation was designed to assess the impact of introducing TEC programmes on the day-to-day work activities of a representative sample of teachers in further education in England and Wales. It has attempted to find out something about what teachers actually do as part of their jobs, to quantify how much time is devoted to various activities and to gain an impression of how the advent of TEC has affected what teachers do and the time that they spend on different activities. In essence, the intention has been to try to shed some light on the extent to which the replacement of City & Guilds, National Certificate and other courses by TEC programmes has placed additional demands on teachers, led to an increase in the total work load and/or to a re-distribution of the way in which teachers allocate their time.

The findings and conclusions which emerge are somewhat limited, if only because the choice of research design and the size of the sample were themselves constrained by the time and resources available to undertake the investigation. Perhaps the most satisfactory way to discover whether the introduction of TEC programmes has had an impact on the work of teachers, for example, would be to have had a 'before and after' comparison with an appropriate control group. As it is, very little can be said with certainty in the present study about the work activities of teachers prior to the advent of TEC programmes and, in addition, it has proved difficult to isolate changes which might have arisen from the introduction of TEC programmes from those which might have arisen from other causes. Similarly, little attempt has been made to obtain information about the way in which teachers' work loads and the problems that they face may change from year to year or from week to week. To have overcome these shortcomings would have needed a different and much more extensive programme of research. The results of this enquiry are based entirely on responses to a postal questionnaire completed by 173 teachers drawn from 18 colleges and on the information provided by work diaries for the seven-day period 18-24 February 1980 completed by 56 of the questionnaire respondents. The sample of teachers was selected so as to be broadly representative of teachers involved with TEC Certificate programmes in Sectors A5, B2 and C1/C2/C5. Some of the main findings can be summarised as follows:

- (i) It seems as though relatively few teachers in

further education are concerned solely with TEC programmes. Amongst the 173 respondents, only about 10% spent virtually the whole of their timetabled hours on TEC programmes of one kind or another. 40% spent one-quarter or less of timetabled hours on TEC programmes. However, more than half of all respondents claimed to have 'special responsibility' for some aspect of TEC-related work, e.g. course tutor, subject co-ordinator, responsibility for curriculum development or student progress. Older and more experienced teachers seem more likely to have such responsibilities than younger and less experienced teachers. It may be that the advent of TEC has resulted in a greater proportion of teachers having some kind of 'special responsibility', although this is not something that was tested in the present study.

- (ii) Teachers concerned with TEC programmes may be somewhat more experienced than non-TEC teachers in terms of age, grade of post and years of teaching experience. Approximately three-quarters of respondents teaching building and engineering subjects, for example, had had more than ten years of full-time teaching experience in further education. In some respects (e.g. proportion of graduates amongst teachers of building subjects and proportion of staff with a Certificate in Education), TEC teachers may also be marginally better qualified than non-TEC teachers. Conceivably, therefore, in deciding which members of staff should be involved with the development and implementation of TEC programmes, colleges have tended to choose their older, more experienced and better qualified teachers. One possible consequence of this would be to place additional demands on precisely those teachers who already have significant responsibilities for other courses.
- (iii) Amongst those respondents who had been or were currently associated with the writing of college-devised TEC Units (N=89), 80% suggested that fewer than 50 man-hours were involved in writing such a Unit. This substantial involvement with curriculum development does,

of course, represent one of the more obvious ways in which the introduction of TEC programmes has created additional work, at least in the initial stages of launching a new programme. No information is available from the present study on the extent to which teachers have been granted remission from class-contact in order to undertake this curriculum development.

- (iv) At least half of the respondents indicated that they spent more time now with TEC programmes on about 25% of 116 selected work-related activities compared with the time they used to spend with the corresponding City & Guilds or National Certificate course. The activities concerned relate mainly to administration, curriculum development, preparation for teaching and student assessment. On only 10% of the activities did the number of respondents claiming that they spent less time with TEC programmes exceed the number suggesting that they spent more time. For a majority of activities – especially those relating to the admission and recruitment of students, professional development and the implementation of teaching – the number of respondents indicating that they spent 'about the same time' on the particular activity exceeds the number indicating that they spent more time. The perceptions which respondents have about the impact of TEC on their day-to-day work activities are broadly similar for teachers from different subject areas, although there may be a slight tendency for the views of teachers of General and Communication Studies and of science and mathematics to depart further from the 'norm' than those of other teachers.
- (v) On the basis of the rather limited evidence available from responses to the questionnaire, it might be claimed that methods of teaching have not changed much as a result of the introduction of TEC programmes. For example, two-thirds of respondents indicated that they spent about the same time now on presenting lectures to groups of students as they used to do with the courses superseded by TEC programmes. Roughly the

same was true for the amount of time devoted to activities such as the supervision of students doing practical work, the dictation of notes to students, and the use of audio-visual materials or 'question and answer' techniques. Against this, however, the findings do suggest that the introduction of TEC programmes has produced a greater emphasis on team teaching and on remedial work for students not making satisfactory progress. There may also have been an increase in the use of informal approaches to teaching, particularly in certain subject areas. Approximately half of the respondents who taught General and Communication Studies, for example, indicated that they now allocated more time to students for private study or self-instruction, and one in four teachers of mechanical engineering claimed that they spent more time now in using study kits or learning packages with students.

- (vi) During the seven-day period 18-24 February 1980, the 56 respondents who completed the work diary spent an average of about 37 hours on work-related activities (minimum 22 hours, maximum 60 hours, standard deviation $7\frac{1}{4}$ hours). Almost 20% of respondents indicated that this particular week was not entirely representative of a year's work load and that, during a 'typical' week, they would probably work more hours than shown in the diary. Mean values for the total hours worked and standard deviations were broadly similar amongst teachers in different subject areas (but note small sub-sample size), with teachers of building subjects averaging 38.8 hours and teachers of General and Communication Studies averaging 34.2 hours. Respondents with special responsibility for some aspect of TEC programmes ($N=39$) worked an average of 38.2 hours, whereas those with no such responsibility ($N=17$) averaged 34.9 hours. Staff with TEC programme responsibilities spent a greater proportion of their total working time on TEC related activities (23% on TEC teaching plus 33% on other TEC related activities) than on all other activities. Those with no special responsibilities for TEC programmes devoted a

smaller proportion of their working time to TEC related activities (17% on TEC teaching plus 25% on other TEC related activities) than to all other activities.

- (vii) A detailed breakdown of data derived from the work diaries appears to confirm the view that teaching on TEC programmes is proportionately more demanding of preparation time than teaching on other courses. TEC teaching is also proportionately much more demanding of time for assessment. Rather surprisingly, perhaps, it is not strongly evident that teaching on TEC programmes is necessarily more demanding of time for administration. Even for those respondents with special responsibility for some aspect of TEC programmes, the ratio of administration time: teaching time for TEC related work (0.32) is smaller than the corresponding ratio for other courses (0.41). For respondents with no special responsibilities for TEC programmes the two ratios are more or less identical (0.11 compared with 0.14). One tentative explanation for this might be that any additional administrative work arising from the introduction of TEC programmes is being carried out mainly by a selected number of more senior staff who, simultaneously, are also spending more time now on the administration of non-TEC courses.

- (viii) Generally speaking, it appears that the more time a member of staff spends on TEC related activities, including teaching on TEC programmes, the more hours he works in the week. In other words, it does seem likely that the introduction of TEC programmes has led to an increased work load for teachers. Moreover, at least part of this increase seems to have been achieved at the expense of time spent on other activities, e.g. preparation for teaching on non-TEC courses. But the information derived from the work diaries shows also that there is a strong correlation between total hours worked and time devoted to non-teaching activities on courses other than TEC programmes. So teachers who spend a high proportion of their total time on non-teaching activities, whether

TEC related or not, seem to have greater work loads than those with a relatively small commitment to non-teaching activities. Might it be that TEC is perceived to be making heavy demands precisely because many of these demands fall on staff who already have a fairly extensive commitment to non-teaching activities in connection with courses other than TEC?²²

All in all, therefore, it seems reasonable to conclude that a majority of teachers concerned with TEC programmes believe that the introduction of these programmes has resulted in their having to devote more time to certain activities - principally those relating to student assessment, curriculum development, preparation for teaching, administration and liaison - compared with the time they used to spend on these activities in connection with courses replaced by TEC programmes. There are differences between teachers associated with different subject areas but, in the main, these differences are not substantial. Information derived from one-week work diaries tends to support these beliefs and to confirm that, for some teachers at any rate, the advent of TEC has probably led to fairly major increases in work loads. No information is available from this enquiry on the extent to which colleges have made organisational changes or sought to re-allocate responsibilities between different members of staff in order to cope with the introduction of TEC programmes and the additional demands on teachers which these programmes have created. But it does seem as though a good many of these demands have fallen on teachers who are already heavily involved with non-teaching activities on other courses and that at least part of the extra work load is met by teachers spending proportionately less time on non-TEC related activities, e.g. preparation for teaching on non-TEC courses. Teachers with TEC programme responsibilities seem to spend proportionately less time on preparation - for both TEC programmes and other courses - than do teachers with no TEC responsibilities.

Arguably, of course, all curriculum development is largely a matter of teacher self-development.²³ For a great many years, the dominant role of the teacher in further education has been to interpret and implement externally prescribed syllabuses in a way that enables his students to achieve success in external examinations. The advent of TEC has modified this traditional role to

some extent and the introduction of TEC programmes has made different demands on teachers. It could hardly have been otherwise. For many staff, however, these new demands do not seem to have been especially severe or far-reaching. When asked to describe the biggest single change in their day-to-day work activities, for example, two-thirds of respondents mentioned either the increase in record keeping and administration or the increase in marking and assessment. Neither in response to this question nor at any other point in the investigation has an example arisen of a teacher claiming that the introduction of TEC programmes has radically altered his whole approach to the business of teaching and learning in further education.²⁴

What seems to be emerging is that one of the chief problems associated with the introduction of TEC programmes is the belief by many teachers that they have had insufficient time to adjust to the new curricula

have had insufficient time to adjust easily to the new curricula and to the new styles of curriculum development on which the curricula are based. But since the majority of respondents in this enquiry appear to support the original decision to establish the Technician Education Council and to feel that the introduction of TEC programmes has been at least fairly successful, it might be assumed that these beliefs have probably not been such as to hamper seriously the implementation of the new programmes. It will be another matter, perhaps, if innovations are introduced into further education which require teachers to adopt radically new approaches to the teaching-learning process. The respondent who claimed that "the introduction of TEC programmes has made little difference to some teachers at the chalkface, partly because the method of innovation did not take account of teacher reaction" would seem to have made a telling point.

1. NACEIC. *Report of the Committee on Technician Courses and Examinations* (Chairman, Dr. H.L. Haslegrave), HMSO, 1969.
2. TECHNICIAN EDUCATION COUNCIL. *Policy statement*, 1974, p.2.
3. For a more detailed account of the scope of the evaluation programme, see PARKIN, C. Formal evaluation of TEC programmes. *Coombe Lodge Reports*, vol. 12, no.6 (*Evaluating TEC programmes*), 1979, pp.278-289.
4. See, for example, CANTOR, L.M. and ROBERTS, I.F. *Further education today*, Routledge & Kegan Paul, 1979, pp.57-83, and Report of a Conference of NATFHE Representatives on TEC Committees, *NATFHE Journal*, no.7.
5. We are grateful to Dr. Chris Parkin for his encouragement and advice in carrying out the project and to the small advisory group of staff from Garnett College (Judith Banbury, Madeleine Corney, Julie Cotton, Ken Galton, Ian McCallum, Jerry Taylor) which was set up to share our thinking about the project and to meet from time to time to discuss progress. The help of Sam Thornton with the computational work involved in analysing the data is also warmly acknowledged. Most of all, however, we are indebted to the 250 or so teachers who found the time and energy to participate in one or other of the different stages of the enquiry. The response from all concerned was most gratifying.
6. In its capacity as sponsoring body, the FEU allocated 72 man-days to the project.
7. A project on *Analysing Teachers' Activities* is currently underway at the University of Nottingham (Director: Michael Youngman). See, also, HILSUM, S. and STRONG, C. *The secondary teacher's day*, NFER, 1978, and studies undertaken by staff of the Center for Vocational Education, Ohio, in connection with the development of Performance-Based Teacher Education programmes e.g. an inventory of 384 performance elements is described in COTRELL, C.J., CHASE, S.A. and MOLNAR, M.J. *Model curricula for vocational and technical teacher education*, Center for Vocational Education, Columbus, Ohio, 1972.
8. YOUNGMAN, M.B., OXTOBY, R., MONK, J.D., and HEYWOOD, J. *Analysing jobs*, Gower Press, 1978.
9. *Secondary teaching activities checklist* (private communication, M. Youngman *et al.*, University of Nottingham, School of Education).
10. As it happens, 20 colleges agreed to co-operate but only 18 actually supplied teachers' names; typical comments from colleges which declined to co-operate were "TEC has brought about so many additional pressures that it is not possible for us to make further demands on those concerned at this college" and "it is too early at this college to make any assessment and, anyway, we are still struggling to understand TEC requirements".
11. 115 people responded before a reminder was sent (43% response), a further 70 responded after the first reminder and a further 21 after the second reminder; four replies were received after the cut-off date for receipt of completed questionnaire and these have not been included in the analysis.
12. The subject areas in which respondents indicated that they did most of their teaching were as follows: Arts/Social Studies (1), Biology (6), Building/Civil Engineering (45), Chemistry (11), Electrical Engineering (2), English (1), General and Communication Studies (16), Mathematics (22), Mechanical/Production Engineering (50), Physics (9) and 'Other' (10); this latter group consisted of five people teaching in areas akin to General Studies/Social Sciences and five people teaching some form of Applied Science.
13. See, BRADLEY, J. AND SILVERLEAF, J. *Making the Grade*, NFER, 1979. This study of careers in F.E. teaching has been drawn on extensively in Section 3.
14. *Statistics of Education*, 1976 (vol.4), HMSO, 1978, pp.46-47.
15. BRADLEY, J. and SILVERLEAF, J., *op.cit.*, p.159.
16. These figures are likely to be under-estimates, if only because some respondents may have interpreted 'total number of man-hours' as the hours which they alone devoted to writing a particular Unit.
17. 19% of respondents were first involved with TEC in 1975 or earlier, 35% in 1976, 28% in 1977, 10% in 1978 and 8% in 1979; 72% of teachers of General and Communication Studies were first involved in 1976 or earlier, compared with 35% of science teachers, 66% of builders and 54% of engineers.
18. ROBERTS, I.F. The Technician Education Council:

Some Thoughts on TEC as a Curriculum Project
Education for Teaching, no.101, 1976, pp.16-28.

19. It is interesting to note, however, that all 12 Heads Department reported that the introduction of TEC had been either "most successful" or "fairly successful".
20. The information derived from the work diaries relates to TEC programmes of all kinds. That from the questionnaire relates specifically to TEC Certificate programmes.
21. For confirmation of these findings, see BRADLEY, J. and SILVERLEAF, J. *op.cit.*, p.104. Responses from more than 3000 teachers in further education yielded average figures for total hours/week spent on various work-related activities as follows: Engineering 36 hours/week, Natural Sciences 39 hours/week, Mathematics 37 hours/week, Liberal or General Studies 39 hours/week, Building 36 hours/week.
22. If anything, this is supported by comparisons between questionnaire information and work diary data. Amongst the 12 respondents who claimed to spend more time now with TEC programmes on the highest proportion of 116 work activities listed in the questionnaire, for example, the number of hours spent on non-teaching activities in connection with non-TEC courses appears to correlate somewhat more highly ($r=0.27$) with the number of activities listed in the questionnaire as requiring more time now, than do the hours spent on TEC teaching ($r=0.11$), TEC non-teaching ($r=0.12$), or non-TEC teaching ($r=-0.07$). None of the correlations is statistically significant.
23. STENHOUSE, L (ed.) *Curriculum research and development in action*, Heinemann Educational Books, 1980, p.255.
24. Perhaps the clearest sort of statement in favour of the introduction of TEC programmes was to the effect that "TEC has made all teachers much more conscious of what and why they are teaching".

Appendix I

A Checklist of the Work Activities of Teachers in Further Education

238 items arranged in 20 categories and derived from (a) questionnaire completed by 20 in-service students attending Garnett College (b) published literature relating to studies of teachers' jobs (c) preliminary information from a project being undertaken at the University of Nottingham into the work activities of schoolteachers.

* Items marked with an asterisk were incorporated into the draft questionnaire (see Appendix II) in one form or another

Garnett College
August 1979

1.0 CURRICULUM DEVELOPMENT

1.1 Assess the need for change and new developments

- 1.1.1* Assess recent changes in industry and commerce with a view to up-dating courses
- 1.1.2* Talk to employers about the kinds of courses they would like to see provided by colleges
- 1.1.3* Explore attitudes of employers towards existing syllabuses
- 1.1.4 Assess the need for new developments in the light of policy changes by examining body
- 1.1.5* Discuss ideas for new courses or modifications to existing courses with college colleagues
- 1.1.6* Talk to former students about the desirability of introducing new courses
- 1.1.7 Discuss proposed course developments with examining body representatives
- 1.1.8* Estimate likely demand for new course

1.2 Plan and prepare a new programme or unit

- 1.2.9* Identify the knowledge, skills and attitudes needed in a particular occupation or group of occupations
- 1.2.10* Analyse a job with a view to preparing new programme
- 1.2.11* Write down statement of course aims and objectives
- 1.2.12* Work as a member of a team developing new courses or up-dating existing courses
- 1.2.13* Attend course planing or course development meeting

- 1.2.14* Devise assessment specification for new course
- 1.2.15* Co-operate with staff from another college in preparing a new course
- 1.2.16* Plan new laboratory or workshop layout
- 1.2.17* Assess resource requirements for putting on a new course
- 1.2.18* Cost new course proposals
- 1.2.19 Assist with the completion of approval forms for the establishment of a new course

2.0 PREPARATION FOR TEACHING

2.1 Prepare a scheme of work

- 2.1.1* Break down a syllabus into teaching topics
- 2.1.2* Devise a week-to-week teaching schedule for a course
- 2.1.3 Identify syllabus topics likely to present greatest difficulties for students
- 2.1.4 Identify syllabus topics likely to be of greatest interest to students
- 2.1.5 Identify syllabus topics likely to be of greatest use to students in their jobs
- 2.1.6* Decide how much time to allocate to the teaching of particular topics
- 2.1.7* Look for associations between syllabus topics
- 2.1.8* Write general and specific learning objectives for a programme or unit
- 2.1.9* Sequence student learning objectives
- 2.1.10 Discuss the interpretation of learning objectives with colleagues

2.2 Plan a lesson and select resources

- 2.2.11* Write a lesson plan
- 2.2.12* Write a set of detailed lesson notes to accompany lesson plan
- 2.2.13* Write a plan for a laboratory or workshop session
- 2.2.14* Plan practical activities specifically to complement classroom instruction
- 2.2.15 Check lesson notes used previously for the same or a similar topic
- 2.2.16 Consult text-books as part of lesson preparation
- 2.2.17* Discuss with colleagues possible approaches to teaching particular topic
- 2.2.18 Arrange with bookshop to stock particular texts
- 2.2.19 Select appropriate audio-visual aids

- 2.2.20 Select handouts or other student material from existing stock of such material
- 2.2.21 Decide whether students should work alone or in groups for particular activity
- 2.2.22* Devise different tasks for different students depending on their abilities
- 2.2.23* Plan lessons specifically for "repeat" groups
- 2.2.24* Decide limits in understanding or task completion beyond which students should not go
- 2.2.25 Rehearse an experiment or manipulative skill before demonstrating it to students
- 2.2.26* Check that the necessary apparatus, equipment or materials are available for laboratory or workshop session
- 2.2.27* Check that equipment or apparatus is working satisfactorily
- 2.2.28 Reserve and/or collect equipment to be used in class
- 2.2.29* Make arrangements for visiting speaker to talk to students

2.3 Produce teaching materials

- 2.3.30* Prepare handouts or duplicated notes for students
- 2.3.31* Prepare student worksheet for practical class
- 2.3.32 Use typewriter during preparation of teaching materials
- 2.3.33* Operate duplicating equipment
- 2.3.34* Operate photo-copying equipment
- 2.3.35* Prepare an OHP transparency
- 2.3.36* Make a film slide or tape-slide sequence
- 2.3.37* Prepare a display chart or poster
- 2.3.38* Make a three-dimensional model or mock-up
- 2.3.39 Seek assistance with the preparation of visual aids or other teacher-made instructional materials
- 2.3.40 Pass written material for use in class to ancillary staff for typing or copying
- 2.3.41 Advise technician on preparation of aids or equipment for demonstration purposes

3.0 TEACHING – IMPLEMENTATION

3.1 Use teacher-centred methods of presentation

- 3.1.1* Present a lecture to a group of students

- 3.1.2* Employ 'question and answer' techniques
- 3.1.3* Conduct a discussion with a group (6 or more) of students
- 3.1.4* Conduct a tutorial session with a small group (3 or fewer) of students
- 3.1.5* Discuss written work with students individually
- 3.1.6 Explain shortcomings or errors in assigned work to whole class
- 3.1.7* Relate the teaching of a particular topic to other areas of the curriculum
- 3.1.8* Teach in such a way as to emphasise relationships between theory and practice
- 3.1.9* Dictate notes to students
- 3.1.10 Write material on the chalkboard or OHP for students to copy down
- 3.1.11* Demonstrate an experiment or manipulative skill to group of students
- 3.1.12 Demonstrate a concept or principle
- 3.1.13* Participate in a team teaching situation with colleagues

3.2 Direct student activity

- 3.2.14 Advise students about what text books to buy
- 3.2.15* Advise students about study skills
- 3.2.16 Advise students on examination techniques
- 3.2.17 Direct students in the use of the library
- 3.2.18 Allocate set reading to students
- 3.2.19* Organise students into small groups (6 or fewer) for discussions
- 3.2.20 Encourage students to ask questions
- 3.2.21 Arrange for students to help one another with assigned tasks
- 3.2.22* Use role-play, gaming or simulation techniques
- 3.2.23 Employ the project method
- 3.2.24* Arrange for and conduct an industrial visit or field trip
- 3.2.25 Provide learning experiences similar to those which students will encounter in employment
- 3.2.26* Supervise laboratory or workshop session
- 3.2.27 Re-arrange classroom furniture to facilitate teaching method
- 3.2.28 Identify students requiring special attention
- 3.2.29* Provide a variety of learning experiences appropriate to different levels of student ability
- 3.2.30 Seek ways of stimulating and maintaining student interest as part of the teaching-learning process

- 3.2.31* Allow students to work on the same task at different rates
- 3.2.32* Instruct students in appropriate safety practices
- 3.2.33 Ensure that students have appropriate equipment and protective clothing for practical work
- 3.2.34 Explain college rules to students
- 3.2.35 Take steps to establish acceptable standards of discipline among students

3.3 Employ audio-visual media and other aids

- 3.3.36 Write or draw on the chalkboard
- 3.3.37* Present information using overhead projector
- 3.3.38* Present information with filmstrips or slides
- 3.3.39 Present information with audio-recordings (tape or cassette)
- 3.3.40* Present information with films or video-taped materials
- 3.3.41* Illustrate teaching with exhibits or models
- 3.3.42* Use programmed learning materials or "learning packages"
- 3.3.43 Use "incomplete" handouts as part of classroom lesson
- 3.3.44 Select students' work for display purposes
- 3.3.45 Use equipment and instruments in teaching similar to those found in the relevant occupation

4.0 ASSESSMENT AND EVALUATION

4.1 Devise tests and other evaluative instruments

- 4.1.1* Write multiple-choice test items
- 4.1.2 Write true-false or matching test items
- 4.1.3* Write short-answer test items
- 4.1.4* Compile titles for extended-essay questions
- 4.1.5* Write long-answer test items
- 4.1.6* Assess the validity of test items
- 4.1.7* Assess the reliability of test items
- 4.1.8* Locate available standardised tests or banks of standard items
- 4.1.9* Prepare draft of examination paper for discussion with colleagues
- 4.1.10 Devise classroom assignments or student study problems
- 4.1.11 Devise laboratory or workshop assignments
- 4.1.12 Draw up a marking scheme
- 4.1.13 Prepare a scheme for the continuous

assessment of students' work

- 4.1.14 Prepare a scheme for the assessment of students' practical work

- 4.1.15* List criteria for assessing student project work

4.2 Administer tests and assess student performance

- 4.2.16 Organise problem sessions as part of normal classwork
- 4.2.17* Set homework for students
- 4.2.18 Set voluntary work for students to be done outside normal class time
- 4.2.19 Report to head of department or course tutor on students not making satisfactory progress
- 4.2.20* Mark students' homework
- 4.2.21* Mark examination papers
- 4.2.22* Mark objective test items
- 4.2.23* Mark practical work exercises
- 4.2.24 Mark project work
- 4.2.25* Carry out an oral examination
- 4.2.26 Apply basic statistical procedures to interpret evaluative data
- 4.2.27* Determine student grades for the term or year
- 4.2.28* Invigilate examinations or testing sessions
- 4.2.29* Discuss students' work with external examiner

4.3 Evaluate effectiveness of teaching and curricula

- 4.3.30* Review methods of teaching in the light of student performance
- 4.3.31 Interpret external examiners' reports
- 4.3.32* Invite comments from students on the course and the effectiveness of teaching methods
- 4.3.33* Invite colleagues to observe and comment on lesson
- 4.3.34* Determine an overall strategy for course evaluation

5.0 STUDENT RECRUITMENT, COUNSELLING AND GUIDANCE

5.1 Assist with student recruitment, selection and admissions

- 5.1.1* Advise on publicity material for college courses
- 5.1.2* Discuss the work of the college with teachers in schools or careers' officers

- 5.1.3* Discuss the work of the college with employers of prospective students
- 5.1.4 Discuss the work of the college with parents of prospective students
- 5.1.5* Assist with the organisation of "open days" or careers' conferences
- 5.1.6* Advise prospective students on the course best suited to their requirements
- 5.1.7* Administer tests to students before admission to course
- 5.1.8 Decide whether or not a student should be admitted to a particular course
- 5.1.9 Ascertain students likely choice of options within course

5.2 Counsel students and offer advice on career opportunities

- 5.2.10* Give assistance to individual students outside normal class time
- 5.2.11* Interview students to assess cause of difficulty with college studies
- 5.2.12 Talk to students about problems which they may be facing in employment
- 5.2.13 Advise students to contact college welfare officer or student counsellor
- 5.2.14* Help students to resolve personal problems
- 5.2.15* Help students who are particularly anxious at examination time
- 5.2.16* Advise students about opportunities for further study for higher qualifications
- 5.2.17 Assist students to apply for admission to university or polytechnic
- 5.2.18* Inform students of the entry requirements for membership of professional body
- 5.2.19* Discuss long-term career opportunities with students
- 5.2.20 Suggest to students that they contact local youth employment officer
- 5.2.21 Help students to complete application forms for jobs
- 5.2.22 Write reference or testimonial for student or former student
- 5.2.23 Read reports on students written by other members of staff

6.0 PERSONAL AND PROFESSIONAL DEVELOPMENT

6.1 Seek to further the status of the profession and to advance professional competency and awareness

- 6.1.1* Read technical or professional journals
- 6.1.2* Read books concerned with curriculum development, methods of teaching or assessment
- 6.1.3* Read books concerned with some aspect of subject matter
- 6.1.4* Read and seek to interpret circulars from examining body
- 6.1.5 Apply for leave of absence to attend a course or conference
- 6.1.6 Undertake course of study leading to a recognised qualification
- 6.1.7 Attend short course or conference concerned with recent developments in a particular subject or industrial activity
- 6.1.8* Attend short course or conference concerned with curriculum development, methods of teaching or assessment
- 6.1.9* Attend trade promotion or demonstration of new equipment or products
- 6.1.10* Seek assistance from staff at another college
- 6.1.11* Maintain links with industry or commerce through personal contacts
- 6.1.12* Observe another lecturer's lessons with a view to improving on performance
- 6.1.13* Act as a consultant to a firm or organisation
- 6.1.14* Attend NATFHE meeting
- 6.1.15 Attend meeting of professional body or subject association
- 6.1.16 Apply for a new job
- 6.1.17 Discuss matters relating to conditions of service and remission time with colleagues
- 6.1.18 Serve as a member of NATFHE branch committee
- 6.1.19 Interpret legal liabilities of the college lecturer

6.2 Assist with staff appointments and staff development

- 6.2.20* Discuss staff vacancies with section leader or head of department

- 6.2.21 Help in the selection of new part-time or full-time members of staff
- 6.2.22 Assist with the "induction" of new members of staff
- 6.2.23* Supervise a student teacher on Teaching Practice
- 6.2.24* Advise colleagues on the interpretation of syllabuses
- 6.2.25* Advise colleagues on methods of teaching
- 6.2.26 Help to organise "in-college" seminar or course
- 6.2.27 Recommend that a member of non-teaching staff attend a course of training

6.3 Take part in extra-curricular professional activities

- 6.3.28* Undertake part-time teaching outside of normal weekly class contact hours
- 6.3.29 Organise visits or field trips for students at week-ends or during vacations
- 6.3.30* Act as external examiner
- 6.3.31 Seek approval from LEA to undertake examining or professional work outside own college
- 6.3.32 Write article, book or paper for publication
- 6.3.33* Represent the college on outside body or association
- 6.3.34 Give talk or lecture to outside body or group
- 6.3.35* Assist with Student Union activities
- 6.3.36* Participate in recognised non-vocational extra-curricular activities with students
- 6.3.37 Take part in informal staff functions

7.0 ADMINISTRATION, CO-ORDINATION AND OTHER ACTIVITIES

7.1 Prepare and maintain records and reports

- 7.1.1* Keep detailed records of lesson content
- 7.1.2* Maintain a filing system
- 7.1.3* Maintain inventory of materials and equipment
- 7.1.4 Record items of equipment issued to students
- 7.1.5 Check that students have completed appropriate registration forms
- 7.1.6 Check entries for external examinations
- 7.1.7* Keep student registers up-to-date
- 7.1.8* Report the names of part-time students who are absent from classes to their employers
- 7.1.9* Maintain record of students' homework marks

- 7.1.10* Maintain record of students' marks for classwork or practical work
- 7.1.11 Complete report forms for recording students' progress
- 7.1.12 Keep continuous record for own use of student performance
- 7.1.13* Write termly or yearly reports on students
- 7.1.14 Report own absence from college to appropriate people

7.2 Estimate for, order and procure equipment and supplies

- 7.2.15 Write to suppliers for catalogues or other information about equipment or product
- 7.2.16* Recommend that a piece of equipment be replaced
- 7.2.17* Submit list of items for inclusion in annual estimates of expenditure
- 7.2.18* Order non-capital items of equipment, materials or supplies
- 7.2.19* Discuss purchase of books with library staff

7.3 Liaise with non-teaching staff

- 7.3.20 Draw up a job specification for a member of non-teaching staff
- 7.3.21 Prepare list of jobs to be undertaken by laboratory or workshop technician
- 7.3.22* Help to ensure that tools and equipment are kept in satisfactory condition
- 7.3.23* Check that laboratories and workshops are kept clean and tidy
- 7.3.24 Supervise stocktaking of equipment and materials
- 7.3.25 Give approval for member of non-teaching staff to be absent from college

7.4 Undertake miscellaneous administrative tasks and consultations

- 7.4.26* Serve as a member of an official college committee
- 7.4.27* Attend departmental or section meetings
- 7.4.28 Help in the preparation of departmental timetables
- 7.4.29* Discuss teaching arrangements with staff in other departments within the college
- 7.4.30* Consult with staff of examining or validating

body

- 7.4.31* Consult with staff of industrial training board
- 7.4.32 Consult with appropriate college staff on Health and Safety matters
- 7.4.33 Contact LEA official with query about salary payment or expenses claim
- 7.4.34 Claim re-imbursement of travel and subsistence expenses
- 7.4.35 Participate in the organisation of student prize-giving ceremony
- 7.4.36 Write letters
- 7.4.37 Write discussion document for committee or working party meeting
- 7.4.38 Make telephone calls
- 7.4.39 Use desk calculator or slide rule

The Impact of TEC on the Day-to-Day Work Activities of Teachers — Questionnaire

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ONC/OND	4
HNC/HND	5
City & Guilds	6
GCE 'O' or 'A' Level	7
Other (please state)	8

.....

.....

.....

- Q.3 (a) Please list all of the UNITS associated with TEC Certificate Programmes that you are teaching on this term; we appreciate that levels are not officially ascribed to General & Communication Studies Units so, if in doubt, enter under Level 1.

Level I Units

Level II Units

Level III Units

- (b) How many of these units are college-devised units as opposed to standard units? If none, write "NONE"; if not sure, write "NOT SURE". Once again, we appreciate that standard units are not available in General & Communication Studies.

- Q.4 Please name courses on which you have taught in recent years and which have been superseded or are about to be superseded by the TEC CERTIFICATE PROGRAMMES on which you now teach (e.g. City & Guilds Mechanical Engineering Technicians' course, ONC Sciences); if more than one course is involved please list more than one).

- Q.5 The following statements describe activities on which you may be engaged as part of your normal duties. By placing a tick in the appropriate column, please indicate whether you spend *more time* or *less time* on each activity in connection with the TEC CERTIFICATE PROGRAMMES compared with the time spent in connection with the corresponding City & Guilds and/or National Certificate course.

PLEASE NOTE:

- (a) As far as TEC CERTIFICATE PROGRAMMES are concerned, make your judgements in terms of what you do *now* or expect to be doing later in 1979-80, rather than in terms of what you did last year or the year before; this will mean concentrating on the Autumn term 1979-80 but also making some inspired guesses about the remainder of the year!
- (b) We are interested in differences that can be attributed more or less directly to the changeover to TEC programmes. We would like you to try to discount differences that arise for other reasons, e.g. because you have changed jobs.
- (c) DO NOT OMIT ITEMS. Please check each page to ensure that *every* item has been ticked in an appropriate space.
- (d) If the item represents something which you have never done as part of your job in relation to TEC CERTIFICATE PROGRAMMES or their predecessors, tick the "Not applicable" column.

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
1. Attend short course or conference concerned with curriculum development, methods of teaching or assessment.				
2. Discuss the work of the college with employers of prospective students.				
3. Use study kits, programmed learning materials or 'learning packages' with students as part of teaching.				

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
4. Help students who are particularly anxious at examination or assessment time.				
5. Discuss methods of assessment with colleagues.				
6. Administer entry test as part of student selection procedures.				
7. Advise students about study methods.				
8. Determine student grades.				
9. Employ question and answer techniques in teaching.				
10. Advise students about opportunities for further education and training once present course is completed.				
11. Attend short course or conference concerned with recent developments in subject field or industrial practice.				
12. Sequence syllabus topics for teaching purposes.				
13. Invite comments from students about the course and methods of teaching.				
14. Use case studies, role-play, gaming or simulation techniques in teaching.				
15. Discuss the work of the college with teachers in schools or with careers officers.				
16. Hold tutorial session with 1-4 students.				
17. Recommend purchase of new pieces of college equipment.				
18. Interview prospective students as part of selection process.				
19. Discuss acquisition of books for library with library staff.				
20. Plan laboratory, workshop or other practical exercises for students.				
21. Work as a member of a team to develop new course or to modify existing course.				

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
22. Help students with academic difficulties outside normal class time.				
23. Liaise with technician staff over preparation for practical session.				
24. Identify knowledge, skills and attitudes needed by technicians working in industry.				
25. Make visual aids.				
26. Participate in team teaching with colleagues.				
27. Prepare a 'learning package' or private-study materials				
28. Set and mark students' homework.				
29. Write specific learning objectives for part of a course.				
30. Conduct a discussion session with 8 or more students as part of teaching.				
31. Use overhead projector.				
32. Discuss timetable arrangements with colleagues.				
33. Mark test papers or internal examinations.				
34. Teach in such a way as to emphasise relationships between theory and practice.				
35. Represent the college on outside body or committee.				
36. Discuss course arrangements and students' work with external examiner or moderator.				
37. Read books or journals concerned with curriculum development, methods of teaching or assessment.				
38. Consider whether students' entry qualifications or experience give exemption from part of the course.				
39. Keep register of students' attendance up-to-date.				
40. Write long-answer items.				
41. Consult with colleagues about teaching of particular topic.				

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
42. Discuss ideas for new course or modifications to existing course with college colleagues.				
43. Maintain links with industry through personal contacts.				
44. Attend course planning meeting.				
45. Discuss long-term career opportunities with students.				
46. Implement remedial system for students not making satisfactory progress.				
47. Serve as a member of college committee.				
48. Plan teaching to cope with differences in students' level of knowledge and understanding.				
49. Consult with staff of industrial training board.				
50. Assess recent industrial and technological changes with a view to up-dating courses.				
51. Devise project work for students.				
52. Talk to colleagues about possible ways of improving one's own teaching performance.				
53. Supervise students during laboratory, workshop or other practical sessions.				
54. Prepare detailed scheme of work for a course or part of a course.				
55. Compile assessment plan for course.				
56. Plan lessons specifically for 'repeat' groups.				
57. Determine criteria for assessing student project work.				
58. Co-operate with staff from another college to prepare new course.				
59. Allocate time to students for private study or self-instruction during normal class time.				
60. Prepare publicity material or organise special event to publicise course.				

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
61. Write end-of-term or end-of-year report on students' progress.				
62. Attend demonstration or trade promotion for new equipment or products.				
63. Write short-answer items.				
64. Determine what resources and support services are needed to launch new course.				
65. Assess validity and reliability of test items.				
66. Maintain record of students' homework marks.				
67. Consult with other staff about progress of individual student.				
68. Prepare student handouts or worksheets for class distribution.				
69. Review methods of teaching in the light of student performance.				
70. Look for associations between syllabus topics in preparing scheme of work and in teaching.				
71. Maintain record of students' marks for classwork or practical work.				
72. Consult employers about the kind of course they would like to see provided.				
73. Present information with films, slides or video-taped material.				
74. Contact employer about progress or absence of students.				
75. Read guidance notes and circulars issued by examining or validating body.				
76. Consult with staff of examining or validating body.				
77. Order materials, supplies or non-capital items of equipment.				
78. Provide opportunities for students to practise problem-solving exercises.				

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
79. Encourage different students to work on the same task at different rates.				
80. Inform students of requirements for admission to membership of professional body.				
81. Apply basic statistical procedures to interpret students' marks.				
82. Advise other staff on syllabus interpretation or teaching methods.				
83. Use tests drawn from bank of items or questions.				
84. Carry out an oral examination.				
85. Instruct students in appropriate safety practices.				
86. Read books or journals concerned with subject matter or industrial developments.				
87. Make a display chart, poster or three-dimensional model.				
88. Attend departmental or section meeting.				
89. Check that laboratories, workshops or studios, etc. are clean and tidy and that tools and equipment are in good condition.				
90. Decide upon course aims and objectives.				
91. Demonstrate a skill or technique to students.				
92. Write a lesson plan or set of notes for a lesson.				
93. Help individual students with personal problems.				
94. Decide what type of assessment is most appropriate for particular topic or skill area.				
95. Make arrangements for visiting speaker to talk to students.				
96. Seek assistance from staff of another college.				
97. Dictate notes to students.				
98. Maintain a filing system.				

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
99. Decide how much time to allocate to the teaching of particular topics.				
100. Arrange for and conduct industrial/cultural visit or field trip with students.				
101. Consult staff in another department within the college about teaching arrangements.				
102. Present a lecture to a group of students.				
103. Mark students' practical work exercises.				
104. Plan a new course or unit in conjunction with staff from another department.				
105. Help students to organise extra-curricular activities.				
106. Estimate likely demand for proposed new course.				
107. Decide limits in understanding or task completion beyond which students should not go.				
108. Advise prospective students on course best suited to their needs and abilities.				
109. Use duplicating machine or photocopying equipment.				
110. Liaise with office staff over administrative procedures concerning student registrations or examination entries.				
111. Illustrate teaching with wall charts, exhibits or models.				
112. Devise different tasks for different students depending on their abilities.				
113. Organise students into small groups for discussions as part of teaching.				
114. Supervise testing sessions as part of classroom teaching.				
115. Write multiple-choice items.				
116. Keep regular record of lesson content taught.				

If you feel that some areas of your own work activities have not been covered adequately by the checklist, please add any items which you consider relevant in the spaces below:

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
117.				
118.				
119.				
120.				

PLEASE CHECK THAT YOU HAVE TICKED EVERY ITEM.

Q.6 Approximately what proportion of your timetabled hours, i.e. 30 hours of duty time, is presently allocated to TEC programmes of any kind?

Please *circle* the appropriate number:

Almost all	4
About $\frac{3}{4}$	3
About $\frac{1}{2}$	2
About $\frac{1}{4}$ or less	1

Q.7 (a) Do you have any special responsibilities for TEC programmes at the moment, either inside or outside the college (e.g. programme supervisor, course tutor, external moderator)?

YES/NO

(b) If "YES", list these responsibilities

Q.8 (a) In which year did you first start *working* (i.e. planning, writing or teaching) on TEC programmes of any kind?

1975 or earlier	5
1976	4
1977	3
1978	2
1979	1

(b) In which year did you *first* start *teaching* on TEC CERTIFICATE PROGRAMMES?

1976	4
1977	3
1978	2
1979	1

Q.9 (a) Have you been or are you now involved with the *writing* of college-devised units of any kind (whether accepted by the Council or not)?

YES/NO

(b) If "YES", what is your estimate of the total number of *man-hours* involved in writing a college-devised Unit for a TEC CERTIFICATE PROGRAMME?

Indicate a range of hours if you have been involved with more than one Unit.

Q.10 Which Department are you in?

Q.11 In which *ONE* of the following subject areas do you do *most* of your teaching at the moment?

Arts/social studies	1
Biology	2
Building/civil engineering	3
Chemistry	4
Computer studies	5
Electrical engineering	6
English	7
General & Communication Studies	8
Mathematics	9
Mechanical/production engineering	10
Physics	11
Other (please state)	

.....
.....
.....

Q.12 What is your present post?

Head of Department	5
Principal Lecturer	4
Senior Lecturer	3
Lecturer II	2
Lecturer I	1

Q.13 How old are you?

Under 30	1
30-39	2
40-49	3
Over 49	4

Q.14 For how many years have you been teaching *full-time* in *Further Education*?

Less than 3 years	1
More than 3 but less than 5	2
More than 5 but less than 10	3
More than 10 years	4

-
- Q.15 (a) Have you *completed* a course of teacher training leading to the award of a PGCE, Certificate in Education or its equivalent? YES/NO
- (b) If "YES", in which year did you *complete* your course of teacher training?
- | | |
|-----------------|---|
| 1973 or earlier | 1 |
| 1974 or 1975 | 2 |
| 1976 or later | 3 |
- (c) If "NO", are you undertaking a Certificate in Education *at the moment*? YES/NO
-

- Q.16 (a) Which of the following qualifications do you possess?
Please circle more than one number if appropriate.
- | | |
|--------------------------------|---|
| City & Guilds Full Tech. Cert. | 1 |
| HNC or HND | 2 |
| First degree | 3 |
| Higher degree | 4 |
- (b) If you possess **NONE** of these qualifications, please state your *highest* educational or professional qualification (do *not* include Certificate in Education)
-

- Q.17 Please circle the number which best illustrates your response to each of the following statements.
- (a) I think that the original decision to establish TEC programmes in place of City & Guilds and National Certificate courses made:
- | | |
|------------------------|---|
| A lot of sense | 4 |
| A fair amount of sense | 3 |
| Hardly any sense | 2 |
| No sense at all | 1 |
- (b) On the whole, the introduction of TEC programmes has, in my experience, been:
- | | |
|---------------------|---|
| Most successful | 4 |
| Fairly successful | 3 |
| Fairly unsuccessful | 2 |
| Most unsuccessful | 1 |
-

Q.18 Please complete *each* of the following sentences in your own words.

- (a) The biggest single change in my day-to-day work activities as a result of the introduction of TEC programmes has been

- (b) I feel sure that I could do a better job as a teacher on TEC CERTIFICATE PROGRAMMES if only

- (c) When I first became involved in the changeover to TEC CERTIFICATE PROGRAMMES my main difficulty was

A questionnaire such as this cannot hope to cover every aspect of the introduction of TEC courses. If you wish to make any further comments or suggestions, please use the space below for this purpose. We shall be very grateful for such comments.

THANK YOU VERY MUCH FOR COMPLETING THIS QUESTIONNAIRE

Before returning it in the s.a.e. provided, would you please check that you have answered all of the questions fully.

It is hoped to complete this enquiry during the summer of 1980 and, amongst other things, to prepare a short summary of the main findings for wider circulation.

- A. Would you like to receive a summary of the main findings in due course?

YES/NO

- B. If invited, might you be willing to help us further by completing a *Diary of Work Activities* during a one-week period in January/February 1980?

YES/NO

Name and address for further correspondence (if appropriate):

Appendix III

The Impact of TEC on the Day-to-Day Work Activities of Teachers — Work Diary

WORK DIARY

(18-24 February 1980)

Confidential

A Research Project sponsored by the Further Education Curriculum Review and Development Unit as a component study of its evaluation of the development and implementation of TEC programmes in the colleges.

Instructions for Completing the Work Activities Diary

Please find attached a Diary Sheet for each of five days, Monday 18 February – Friday 22 February 1980. For each day, you are invited to try to describe *all* of the work-related activities which you undertake, indicating the time spent on the activity and whether the activity is carried out in relation to TEC programmes or not.

There is a final sheet which can be used to describe any work-related activities which you undertake outside the time covered by the daily sheets but within the period 18-24 February, e.g. over the week-end 23-24th.

If at all possible, work-related activities should be defined as *one* of the following:

1. CURRICULUM DEVELOPMENT (*Curric Dev*)
(e.g. plan and prepare a new unit or programme, discuss ideas for modifying course with colleagues, attend course planning meeting, talk to employers about the kind of course they would like to see provided)
2. PREPARATION (*Prep*)
(e.g. plan a lesson and select resources, produce handouts or teaching materials, devise project work for students, prepare a scheme of work)
3. TEACHING (*Teach*)
(e.g. present a lesson or lecture, supervise students during laboratory or workshop session, conduct an industrial visit, hold a tutorial session with one or more students)
4. ASSESSMENT (*Assess*)
(e.g. write and devise tests, determine student grades, set and mark homework, administer tests and assess student performance)
5. RECRUITMENT AND COUNSELLING (*R&C*)
(e.g. assist with student recruitment, selection and admissions, discuss the work of the college with employers or school teachers, help individual students with personal problems, help students with academic difficulties outside normal class time)

6. PROFESSIONAL DEVELOPMENT (*Prof Dev*)

(e.g. attend short course or conference, attend NATFHE meeting, read text books or journals – not specifically related to lesson preparation, undertake outside professional work related to college job)

7. ADMINISTRATION AND LIAISON (*Admin*)

(e.g. prepare and maintain records and reports, estimate for and order equipment and supplies, liaise with non-teaching staff, undertake miscellaneous administrative tasks and consultations, including discussions with colleagues not classified under 1-6)

We hope that this simplified classification system will help you to fill in the Diary Sheets fairly quickly, especially if you use appropriate abbreviations. It would be particularly helpful if you could give brief additional information about each activity. Some activities may be difficult to categorise so, if in doubt, please describe the activity in as much detail as seems necessary. Overleaf, you will find an example of a completed Diary sheet which gives some idea of what is expected.

PLEASE NOTE:

- (a) Enter ALL work-related activities and, wherever possible, use the categories listed above, bracketing the period of time covered by each *separate* activity
- (b) Because of limitations of space, you may find it difficult to enter activities which last for short periods of time; in any event, try to enter activities in multiples of 15 minutes, i.e. 15, 30 or 45 minutes, 1, 1¼, 1½ hours etc.
- (c) Leave a gap on the Diary Sheet for any time that does not encompass activities related to college work
- (d) If a particular activity appears to cover both "TEC-related" and "Other course-related" (e.g. attendance at departmental meeting), enter under one or other of the columns and mark with an asterisk*.
- (d) We suggest that you try to write up the Diary on 2-3 occasions each day rather than, say, waiting until the end of the day to complete the entire sheet.

Work Activities Diary – Example

	TEC-RELATED ACTIVITIES	OTHER COURSES-RELATED ACTIVITIES
09.00	<i>Prep</i> - HTC Phase text & lect. notes	
10.00	<i>Teach</i> - HTC Mechanical Technology	
11.00		
12.00		<i>Assess</i> - OND Technology
13.00	<i>Admin</i> - discussion with HoD about timetables	
14.00		<i>Teach</i> - C&G 205
15.00	<i>Prep</i> - write notes for Level 1 (Elect. Drawing)	
16.00		Help students with extra-curricular activities
17.00	<i>Teach</i> - TEC Level III (Elect. Eng)	
18.00	<i>R&C</i> - helping individual student	
19.00		
20.00		<i>Teach</i> - MV Technicians
21.00		
		<i>Prof.dev.</i> - reading new text book*

Any time spent on work-related activities outside the hours of 8.00-22.00 should be shown on the final sheet.

* Denotes activity relevant to both TEC *and* other courses

Work Activities Diary – MONDAY, 18 FEBRUARY 1980

(separate sheets included for remainder of week)

	TEC-RELATED ACTIVITIES	OTHER COURSES-RELATED ACTIVITIES
09.00		
10.00		
11.00		
12.00		
13.00		
14.00		
15.00		
16.00		
17.00		
18.00		
19.00		
20.00		
21.00		

Any time spent on work-related activities outside the hours of 8.00-22.00 should be shown on the final sheet.
PLEASE INCLUDE ALL WORK-RELATED ACTIVITIES.

Please use this final sheet to add any further comments and to show the amount of time spent on work related activities which fall outside the hours covered by the preceding sheets (Monday - Friday, 08.00-22.00) but within the seven-day period Monday 18 February - Sunday 24 February, 1980.

Please write in the day and date, together with details of the appropriate activity and the amount of time devoted to it, e.g. Tuesday 19th - Preparation 45mins, or Sunday 24th - Assessment 1½ hours.

Day and Date	TEC-Related Activities	Other Course-Related Activities

(e.g. extent to which the period 18-24 February can be regarded as a "typical" seven day period)

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Appendix IV

A Selection of Teachers' Comments on the Impact of TEC Programmes

"I feel sure that I could do a better job as a teacher on TEC Certificate programmes if only..."

"I had more time to do all the marking involved"

"More time could be given over to curriculum development"

"I could allocate more preparation time to the task"

"The amount of duplication of effort could be eliminated"

"The time allocated to individual Units was more precisely matched to the character of the Unit"

"I had more time to write materials"

"I did not require eight hours sleep in every twenty four"

"More time was available to cover all of the syllabus items"

"Specific objectives were more clearly defined"

"I had more freedom to digress occasionally without worrying about the wrath of TEC"

"The content of different Units was better co-ordinated"

"Students followed a common pattern of Units... a national TEC Certificate programme was instituted"

"Standard Units allowed for more flexibility"

"I wasn't so bogged down with the assessment/re-assessment problem"

"Classes were not disrupted so much through students having to repeat phase tests"

"The scheme of assessment was more in keeping with my own philosophy of teaching"

"All of the assessment was done externally"

"We were not continually pressed to pass weak students despite their poor performance"

"There was more freedom to move away from the rigid procedures laid down for marking"

"I could discuss my work with teachers in other colleges"

"Other staff understood it all"

"There were more opportunities for staff discussion"

"I could be given the full course details at the outset of a Unit"

"A proper national system was organised"

"I had been on courses where the TEC philosophy was explained"

"There was less administration involved"

"Record keeping was reduced to a suitable level"

"Some of the associated paper work could be carried out by secretarial staff"

"There were learning packages available for each Unit"

"We had additional reprographic facilities... and a communal resources bank had been established from the start"

"Rules for exemptions could be more closely defined and strictly adhered to"

"Entry qualifications were more satisfactory, e.g. at least 2 'O'-levels"

"The biggest single change in my day-to-day work activities as a result of the introduction of TEC programmes has been..."

"The vast increase in superfluous paperwork"

"Having to put in extra work on record keeping"

"A substantial change in emphasis towards administration in some cases leading to a direct choice between preparation for teaching and record keeping"

"More paperwork and administration - much of it unnecessary"

"Coping with the requirements for in-course assessment"

"Setting phase tests"

"Increased time on assessment and marking of students' work"

"The introduction of regular testing"

"Re-setting tests for failures and absentees"

"Learning new subject matter or revising old subject matter"

"The battle to maintain a quarry of up-to-date vocationally based communications material"

"The increase in team work, discussion and a sharing of materials"

"More interchange of ideas with members of other departments"

"Having to look at my work in terms of objectives"

"The constant battle to reconcile behavioural objectives to traditional requirements"

"Finding the energy for the extra effort required"

"Coping with the great burden of work that results from bureaucracy"

"The reduction in time for preparing lectures and practical work"

"Knowing what I am going to do next week, having already been told by the person who devised the Units"

"Having less flexibility in the classroom because of the rigidity of objectives"

"Working to a much more closely organised and validated work plan"

"A much greater involvement in the total course"

"The difficulty in keeping up with TEC documentation"

"Coping with larger classes"

"Counselling employers as well as students and staff"

"A reduction in the range of subjects I was asked to teach"

"Having a stronger hold over students - if they fail my bit they fail the lot"

"A marked decrease in job satisfaction"

"Seeing the satisfaction and contentment shown by students"

"When I first became involved in the changeover to TEC Certificate programmes my main difficulty was..."

"Finding enough time to do all the work, especially attendance at conferences"

"A shortage of time to prepare notes and handouts"

"Not having enough time for anything"

"Finding the time to develop teaching materials to meet particular objectives"

"Making time to keep up with the activities of part-time lecturers"

"Trying to find the extra time to do all of the course management"

"Getting through the Units in the time available"

"Deciding how much time to allocate to each topic"

"Interpreting the scheme of work... exactly what I had to teach"

"Working out inter-relationships between Units"

"Determining the level and depth of subject matter relevant to that of ONC"

"Trying to see the whole programme as an integrated unit"

"Writing Units in objective terms without losing the educational value of my area of work"

"Feeling tied to a syllabus"

"Teaching to objectives"

"Coming to terms with the increase in unnecessary and money-wasting bureaucracy"

"Trying to establish the correct procedures for operating the course"

"Identifying the important information from the mass of papers sent out"

"Getting used to the amount of documentation involved"

"Coping with the associated record keeping"

"Understanding how to analyse assessment gradings"

"Familiarising myself with the new procedures for assessment"

"Determining exactly how assessment was to work over the whole programme"

"Finding the right standard for assessments"

"Generally coming to terms with the new system"

"Accepting the lower standards required"

"Coping with students with a wider range of academic backgrounds"

"Coming to terms with having to drop an ONC course that seemed to have more relevance"

"Overcoming my own resistance to change for change's sake"

Respondents were also invited to make any further comments or suggestions if they wished. Comments were received from 88 respondents (51%) and they included the following:

"I believe that because TEC was introduced a little at a time, there is now so much duplication of subject matter that frustration occurs with both staff and students"

"Of 36 staff in my Department, about 30 appear to dislike the TEC system intensely. . . we have all been turned into narrow-range subject specialists surrounded by paperwork"

"I am disturbed at the complete freedom which individual colleges seem to have to use any one of numerous models of phase test or end test"

"The Standard Units in my subject have been very adequately prepared. . . we seem to have gone round in circles and arrived roughly at where we were in 1939"

"There are too many subject areas in TEC programmes with too shallow a depth"

"The scheme is much too cumbersome to operate - a bureaucrat's idea of heaven"

"A student entering a degree course after completing a TEC Certificate course will find the studies impossible"

"Standard Units make for very disjointed teaching in my subject"

"The remoteness of the TEC computer has considerable disadvantages. . . there appears to be far too much centralisation"

"National examinations and phase tests based on national syllabuses would result in properly moderated papers with qualifications having national currency and carrying greater respect from industry"

"Although TEC is an improvement. . . the inter-departmental liaisons called for by TEC have not happened on anything but the most superficial levels"

"The students seem unable to retain the information from one year to the next as well as the 'old' technician students"

"Many employers and, to a lesser extent, many students do not understand the aims and objectives of TEC"

"There is a multiplicity of standards. . . but higher student motivation"

"I wonder about the value of the consultation with industry that is supposed to have taken place"

"TEC has been a source of irritation to many staff. . . much remains to be done to simplify the reporting and registration systems"

"Although TEC has appeared to inflict a considerably increased work load, we have been able to re-look at the courses involved. . . there could be great gains from the exercise"

"My private life has unquestionably suffered"

"Since TEC and BEC have to be concentrated on the willing and able, a marked imbalance has developed in the work load distribution. . . there has been an increase in the incidence of certified illness, which some see as symptomatic of exhaustion"

"TEC appears not to have the resources to carry out the work properly. . . things are altered too frequently and too late"

"TEC was a fine conception. . . but too much effort is spent in trying to regularise what a professional teacher is quite capable of achieving more efficiently in his own personal way"

"The story so far with TEC is the encapsulated story of all educational innovations in Britain: well-intentioned planners producing a scheme that has to be run on a shoe-string"

Appendix V

Teachers' claims about the effect of introducing TEC Certificate programmes on the amount of time spent on selected activities

(% of respondents in each category, N=173; Comparison with the amount of time respondents claimed that they used to spend on City & Guilds and/or National Certificate courses)

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
Mark test papers or internal examinations	90.8	3.5	5.2	0.6
Discuss methods of assessment with colleagues	87.3	10.4	2.3	0.0
Read guidance notes and circulars issued by examining or validating body	73.4	17.9	4.6	3.5
Compile assessment plan for course	72.3	13.9	4.0	9.2
Write short-answer items	72.3	19.1	2.9	5.2
Determine student grades	69.9	21.4	2.9	5.8
Work as a member of a team to develop new course or to modify existing course	67.6	13.9	4.6	13.9
Discuss course arrangements and students' work with external examiner or moderator	67.1	13.9	1.7	17.3
Supervise testing sessions as part of classroom teaching	64.7	26.6	2.9	5.8
Consider whether students' entry qualifications or experience give exemption from part of the course	61.3	15.6	2.3	20.8
Attend departmental or section meeting	59.0	34.1	2.9	3.5
Decide what type of assessment is most appropriate for particular topic or skill area	57.8	26.6	5.2	9.8
Write multiple-choice items	57.2	24.3	7.5	11.0
Discuss ideas for new course or modifications to existing course with college colleagues	56.6	25.4	3.5	14.5
Implement remedial system for students not making satisfactory progress	56.6	20.2	7.5	15.0
Write specific learning objectives for part of a course	55.5	16.2	6.9	21.4
Prepare student handouts or worksheets for class distribution	53.2	41.6	4.6	0.0
Use duplicating machine or photocopying equipment	53.2	41.0	3.5	2.3
Assess validity and reliability of test items	52.0	32.4	4.6	10.4
Decide how much time to allocate to the teaching of particular topics	51.4	39.3	6.9	1.7
Maintain a filing system	50.9	41.0	6.4	1.2

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
Discuss timetable arrangements with colleagues	50.3	40.5	1.7	7.5
Decide upon course aims and objectives	50.3	26.0	6.4	16.8
Consult with other staff about progress of individual student	49.7	46.8	2.3	0.6
Advise other staff on syllabus interpretation or teaching methods	49.7	27.2	4.6	17.9
Prepare detailed scheme of work for a course or part of a course	48.0	36.4	6.9	8.1
Sequence syllabus topics for teaching purposes	47.4	34.7	7.5	10.4
Attend course planning meeting	46.2	31.8	1.7	20.2
Attend short course or conference concerned with curriculum development, methods of teaching or assessment	44.5	26.0	5.2	24.3
Maintain record of students' marks for classwork or practical work	44.5	50.3	3.5	1.2
Devise project work for students	43.4	27.7	6.4	22.0
Liaise with office staff over administrative procedures concerning student registrations or examination entries	42.8	29.5	4.6	23.1
Consult with colleagues about teaching of particular topic	41.6	50.3	4.6	3.5
Apply basic statistical procedures to interpret students' marks	41.6	32.9	6.9	17.9
Use tests drawn from bank of items or questions	41.6	23.7	5.2	28.9
Determine criteria for assessing student project work	40.5	30.6	3.5	24.9
Consult with staff of examining or validating body	39.9	26.0	4.6	28.9
Identify knowledge, skills and attitudes needed by technicians working in industry	39.3	42.8	6.4	11.6
Set and mark students' homework	39.3	43.9	16.2	0.6
Look for associations between syllabus topics in preparing scheme of work and in teaching	39.3	53.2	4.0	2.9
Plan lessons specifically for 'repeat' groups	38.2	23.1	4.0	34.1
Serve as a member of college committee	37.0	28.3	3.5	30.6

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
Write end-of-term or end-of-year report on students' progress	36.4	49.1	5.8	8.1
Help students who are particularly anxious at examination or assessment time	35.3	48.6	12.1	4.0
Co-operate with staff from another college to prepare new course	35.3	6.4	1.7	56.1
Maintain record of students' homework marks	35.3	52.6	9.2	2.3
Advise prospective students on course best suited to their needs and abilities	34.1	35.8	3.5	26.6
Determine what resources and support services are needed to launch new course	34.7	26.6	4.6	33.5
Read books or journals concerned with curriculum development, methods of teaching or assessment	33.5	53.2	8.7	4.6
Write a lesson plan or set of notes for a lesson	33.5	59.0	6.4	0.6
Discuss the work of the college with employers of prospective students	32.9	33.5	2.9	30.6
Decide limits in understanding or task completion beyond which students should not go	32.4	48.6	5.8	13.3
Plan teaching to cope with differences in students' level of knowledge and understanding	31.2	52.0	9.2	6.9
Write long-answer items	30.6	45.7	17.9	5.8
Review methods of teaching in the light of student performance	30.6	61.8	5.2	1.7
Consult staff in another department within the college about teaching arrangements	30.6	35.3	5.8	28.3
Participate in team teaching with colleagues	29.5	22.0	4.6	43.9
Plan laboratory, workshop or other practical exercises for students	28.9	42.2	11.0	17.9
Plan a new course or unit in conjunction with staff from another department	27.2	12.7	3.5	56.6
Keep regular record of lesson content taught	27.2	68.2	4.0	0.6
Represent the college on outside body or committee	26.0	26.0	6.4	41.6
Consult employers about the kind of course they would like to see provided	26.0	22.0	3.5	48.0

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
Advise students about study methods	24.9	60.7	9.2	5.2
Talk to colleagues about possible ways of improving one's own teaching performance	23.7	62.4	4.6	8.7
Instruct students in appropriate safety practices	23.7	52.6	1.7	21.4
Interview prospective students as part of selection process	23.1	28.3	1.2	47.4
Discuss acquisition of books for library with library staff	22.5	63.6	3.5	10.4
Prepare a 'learning package' or private-study materials for students	22.5	28.9	7.5	41.0
Help students with academic difficulties outside normal class time	21.4	53.8	10.4	14.5
Make visual aids	21.4	59.0	9.8	9.8
Teach in such a way as to emphasise relationships between theory and practice	21.4	69.9	5.2	3.5
Keep register of students' attendance up-to-date	21.4	76.9	1.2	0.6
Assess recent industrial and technological changes with a view to up-dating courses	21.4	53.2	6.4	18.5
Allocate time to students for private study or self-instruction during normal class time	21.4	34.1	11.6	32.4
Mark students' practical work exercises	21.4	45.1	14.5	19.1
Estimate likely demand for proposed new course	20.2	29.5	4.0	46.2
Employ question and answer techniques in teaching	19.7	69.9	8.7	1.7
Administer entry test as part of student selection procedures	19.1	15.0	1.7	64.2
Liaise with technician staff over preparation for practical session	19.1	55.5	5.2	20.2
Recommend purchase of new pieces of college equipment	18.5	59.0	4.0	18.5
Contact employer about progress or absence of students	17.9	51.4	2.3	27.7
Maintain links with industry through personal contacts	17.3	54.3	7.5	20.8
Supervise students during laboratory, workshop or other practical sessions	17.3	48.0	11.0	23.1

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
Provide opportunities for students to practice problem-solving exercises	16.8	56.6	16.8	9.2
Encourage different students to work on the same task at different rates	16.8	49.1	15.0	18.5
Carry out an oral examination	16.8	31.8	5.8	45.1
Read books or journals concerned with subject matter or industrial developments	16.8	69.4	11.0	2.3
Use overhead projector	16.2	74.0	4.0	5.8
Present a lecture to a group of students	16.2	67.1	5.2	11.6
Invite comments from students about the course and methods of teaching	15.6	59.0	6.9	18.5
Discuss the work of the college with teachers in schools or with carrers officers	14.5	38.7	4.0	42.8
Devise different tasks for different students depending on their abilities	14.5	46.8	19.7	19.1
Demonstrate a skill or technique to students	13.9	67.1	6.9	11.6
Organise students into small groups for discussions as part of teaching	13.9	34.1	11.6	40.5
Use study kits, programmed learning materials or 'learning packages' with students as part of teaching	13.3	38.7	11.0	37.0
Inform students of requirements for admission to membership of professional body	13.3	59.0	4.6	22.5
Help individual students with personal problems	12.7	69.9	10.4	6.4
Seek assistance from staff of another college	12.7	26.6	3.5	56.6
Advise students about opportunities for further education and training once present course is completed	12.1	62.4	8.1	17.3
Hold tutorial session with 1-4 students	12.1	13.3	13.3	61.3
Conduct a discussion session with 8 or more students as part of teaching	12.1	39.3	12.1	36.4
Dictate notes to students	12.1	53.2	15.6	18.5
Prepare publicity material or organise special event to publicise course	11.6	20.8	3.5	63.6

	"More time" now with TEC	"About the same time"	"Less time" now with TEC	"Not applic- able"
Present information with films, slides or video-taped material	11.6	63.6	12.7	11.6
Attend short course or conference concerned with recent developments in subject field or industrial practice	11.0	43.9	15.0	30.1
Illustrate teaching with wall charts, exhibits or models	11.0	76.3	5.8	6.9
Use case studies, role-play, gaming or simulation techniques in teaching	10.4	33.5	13.3	42.8
Discuss long-term career opportunities with students	10.4	67.1	4.6	17.9
Order materials, supplies or non-capital items of equipment	9.8	68.2	2.3	19.1
Make a display chart, poster or three-dimensional model	7.5	50.9	13.3	27.7
Arrange for and conduct industrial/cultural visit or field trip with students	6.9	44.5	17.3	31.2
Consult with staff of industrial training board	6.4	24.9	1.2	67.1
Make arrangements for visiting speaker to talk to students	4.0	45.1	12.1	38.2
Check that laboratories, workshops or studios, etc. are clean and tidy and that tools and equipment are in good condition	2.9	61.3	4.6	30.6
Help students to organise extra-curricular activities	1.2	31.8	10.4	56.6
Attend demonstration or trade promotion for new equipment or products	6.4	52.6	10.4	30.1

Appendix VI

Hours Spent by TEC Teachers on Specified Work-related Activities during Seven-day Period, 18-24 February 1980 (Data From Work Diaries)

Note: Discrepancies in some totals due to rounding

Mean Hours Spent by All Teachers (N=56)

		Min. Hours	Mean Hours	Max. Hours	Standard Deviation
Curriculum Development	TEC Related	0.0	1.0	8.0	2.0
	Other	0.0	0.6	8.5	1.5
Preparation for Teaching	TEC Related	0.0	3.2	12.5	3.1
	Other	0.0	1.8	12.5	2.6
Teaching	TEC Related	0.2	8.1	23.5	5.2
	Other	0.0	9.5	20.2	5.5
Assessment	TEC Related	0.0	3.9	15.5	3.2
	Other	0.0	1.3	9.5	2.2
Recruitment and Counselling	TEC Related	0.0	0.3	3.2	0.7
	Other	0.0	0.3	4.0	0.8
Professional Development	TEC Related	0.0	0.5	4.7	1.1
	Other	0.0	1.1	9.5	2.1
Administration and Liaison	TEC Related	0.0	2.2	13.0	3.0
	Other	0.0	2.8	17.5	4.4
Other	TEC Related	0.0	0.2	5.0	0.8
	Other	0.0	0.4	7.0	1.2
Total Time	TEC Related	3.5	19.4	43.5	9.5
	Other	0.0	17.8	38.5	9.1

Mean Hours Spent by Teachers with TEC Programme Responsibilities (N=39)

		Min. Hours	Mean Hours	Max. Hours	Standard Deviation
Curriculum Development	TEC Related	0.0	1.0	8.0	2.1
	Other	0.0	0.7	8.5	1.6
Preparation for Teaching	TEC Related	0.0	3.0	12.5	3.3
	Other	0.0	1.5	12.5	2.2
Teaching	TEC Related	0.2	8.9	23.5	5.7
	Other	0.0	8.0	19.7	5.1
Assessment	TEC Related	0.0	4.3	15.5	3.6
	Other	0.0	1.4	9.5	2.4
Recruitment and Counselling	TEC Related	0.0	0.4	3.2	0.7
	Other	0.0	0.4	4.0	0.8
Professional Development	TEC Related	0.0	0.6	4.7	1.1
	Other	0.0	1.1	9.0	2.0
Administration and Liaison	TEC Related	0.0	2.9	13.0	3.3
	Other	0.0	3.3	17.5	4.5
Other	TEC Related	0.0	0.3	5.0	1.0
	Other	0.0	0.5	7.0	1.4
Total Time	TEC Related	3.5	21.5	43.5	10.0
	Other	0.0	16.7	38.5	8.9

Mean Hours Spent by Teachers with No TEC Programme Responsibilities (N=17)

		Min. Hours	Mean Hours	Max. Hours	Standard Deviation
Curriculum Development	TEC Related	0.0	0.8	6.0	1.6
	Other	0.0	0.3	5.5	1.3
Preparation for Teaching	TEC Related	0.0	3.8	8.0	2.2
	Other	0.0	2.7	12.5	3.1
Teaching	TEC Related	1.5	6.1	12.0	3.3
	Other	2.7	12.8	20.2	4.7
Assessment	TEC Related	0.0	2.9	7.5	1.9
	Other	0.0	1.2	5.0	1.5
Recruitment and Counselling	TEC Related	0.0	0.1	1.7	0.4
	Other	0.0	0.2	2.0	0.5
Professional Development	TEC Related	0.0	0.2	3.5	0.8
	Other	0.0	1.2	9.5	2.4
Administration and Liaison	TEC Related	0.0	0.7	5.0	1.2
	Other	0.0	1.8	15.5	3.8
Other	TEC Related	0.0	0.0	0.0	0.0
	Other	0.0	0.1	1.0	0.2
Total Time	TEC Related	6.0	14.6	32.0	6.0
	Other	4.7	20.3	38.5	9.0

Mean Hours Spent by Building Subject Teachers (N=13)

		Min. Hours	Mean Hours	Max. Hours	Standard Deviation
Curriculum Development	TEC Related	0.0	1.2	7.5	2.2
	Other	0.0	0.4	3.5	1.0
Preparation for Teaching	TEC Related	0.0	3.7	10.0	3.2
	Other	0.0	0.7	3.0	1.1
Teaching	TEC Related	0.2	10.7	23.5	6.5
	Other	1.5	5.2	16.0	4.0
Assessment	TEC Related	0.0	4.1	8.5	2.9
	Other	0.0	0.5	3.5	1.0
Recruitment and Counselling	TEC Related	0.0	0.2	1.7	0.5
	Other	0.0	0.3	1.5	0.5
Professional Development	TEC Related	0.0	1.1	4.7	1.6
	Other	0.0	1.8	9.0	2.8
Administration and Liaison	TEC Related	0.0	4.3	12.2	3.7
	Other	0.0	3.6	12.7	4.7
Other	TEC Related	0.0	0.4	5.0	1.3
	Other	0.0	0.3	4.2	1.1
Total Time	TEC Related	12.5	26.0	43.5	9.1
		2.0	12.8	23.0	7.6

Mean Hours Spent by Mechanical Engineering Subject Teachers (N=17)

		Min. Hours	Mean Hours	Max. Hours	Standard Deviation
Curriculum Development	TEC Related	0.0	0.7	6.0	1.6
	Other	0.0	0.2	3.0	0.7
Preparation for Teaching	TEC Related	0.0	3.3	7.5	2.2
	Other	0.0	1.1	4.0	1.2
Teaching	TEC Related	4.7	9.2	14.7	3.4
	Other	2.0	11.8	19.7	4.8
Assessment	TEC Related	0.0	4.6	14.0	3.5
	Other	0.0	0.9	5.0	1.6
Recruitment and Counselling	TEC Related	0.0	0.1	1.5	0.4
	Other	0.0	0.1	0.5	0.2
Professional Development	TEC Related	0.0	0.3	2.0	0.6
	Other	0.0	0.8	9.5	2.3
Administration and Liaison	TEC Related	0.0	1.2	4.2	1.3
	Other	0.0	1.6	7.2	2.3
Other	TEC Related	0.0	0.0	0.0	0.0
	Other	0.0	0.3	4.0	1.0
Total Time	TEC Related	6.0	19.3	31.7	6.3
	Other	4.5	16.7	29.2	6.3

Mean Hours Spent by Science and Mathematics Teachers (N=15)

		Min. Hours	Mean Hours	Max. Hours	Standard Deviation
Curriculum Development	TEC Related	0.0	1.3	8.0	2.1
	Other	0.0	0.9	5.5	1.7
Preparation for Teaching	TEC Related	0.0	3.3	12.5	3.2
	Other	0.0	3.4	12.5	3.1
Teaching	TEC Related	1.0	4.4	16.5	4.8
	Other	0.0	11.3	20.2	6.1
Assessment	TEC Related	0.0	3.2	15.5	3.8
	Other	0.0	2.5	9.5	2.8
Recruitment and Counselling	TEC Related	0.0	0.3	3.2	0.9
	Other	0.0	0.7	4.0	1.1
Professional Development	TEC Related	0.0	0.3	3.0	0.8
	Other	0.0	1.2	5.0	1.6
Administration and Liaison	TEC Related	0.0	2.0	13.0	3.4
	Other	0.0	3.2	17.5	5.8
Other	TEC Related	0.0	0.1	2.0	0.5
	Other	0.0	0.6	7.0	1.8
Total Time	TEC Related	3.5	14.8	43.5	11.1
	Other	0.0	23.7	38.5	11.3

Mean Hours Spent by General and Communication Studies Teachers (N=8)

		Min. Hours	Mean Hours	Max. Hours	Standard Deviation
Curriculum Development	TEC Related	0.0	1.4	7.2	2.4
	Other	0.0	1.2	8.5	2.8
Preparation for Teaching	TEC Related	0.0	1.3	7.7	2.5
	Other	0.0	1.2	3.7	1.3
Teaching	TEC Related	2.7	7.9	15.0	3.9
	Other	3.5	8.3	14.0	3.4
Assessment	TEC Related	0.0	3.2	5.2	1.6
	Other	0.0	1.6	8.0	2.6
Recruitment and Counselling	TEC Related	0.0	0.4	2.5	0.8
	Other	0.0	0.4	2.5	0.8
Professional Development	TEC Related	0.0	0.4	3.2	1.1
	Other	0.0	0.9	4.0	1.4
Administration and Liaison	TEC Related	0.0	0.9	4.5	1.4
	Other	0.0	4.6	8.5	3.4
Other	TEC Related	0.0	0.4	3.5	1.2
	Other	0.0	0.2	1.2	0.4
Total Time	TEC Related	10.0	14.8	26.2	6.5
	Other	10.2	18.3	24.2	4.6

Curriculum Change Part 2a is one of a number of FEU publications intended to inform teachers and others and to stimulate professional discussion about matters of concern to the FES.

In December 1981 the FEU published the main volume of **Curriculum Change**. The report represents an attempt to evaluate the curriculum process introduced by the Technician Education Council. Throughout the report and its conclusions, is the persistent criticism that because of pressure of existing work, of time and lack of support, local curriculum development had to be rushed and there was therefore insufficient opportunity for genuine curriculum reflection. While these and other issues raised in the report are particular to TEC the lessons to be learned are perhaps relevant to all involved in curriculum change.

Copies of **Curriculum Change** are available from Publication Despatch Centre, Department of Education and Science, Honeypot Lane, Canons Park, Stanmore, Middlesex HA7 1AZ.

A complete list of FEU publications is available from the same address.